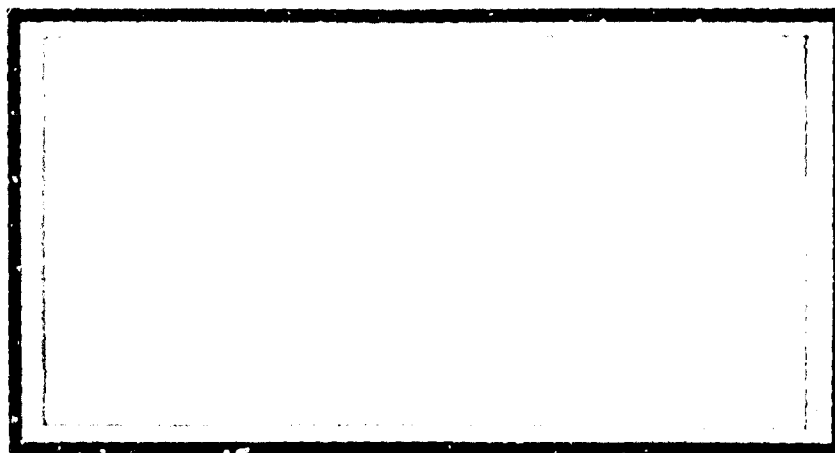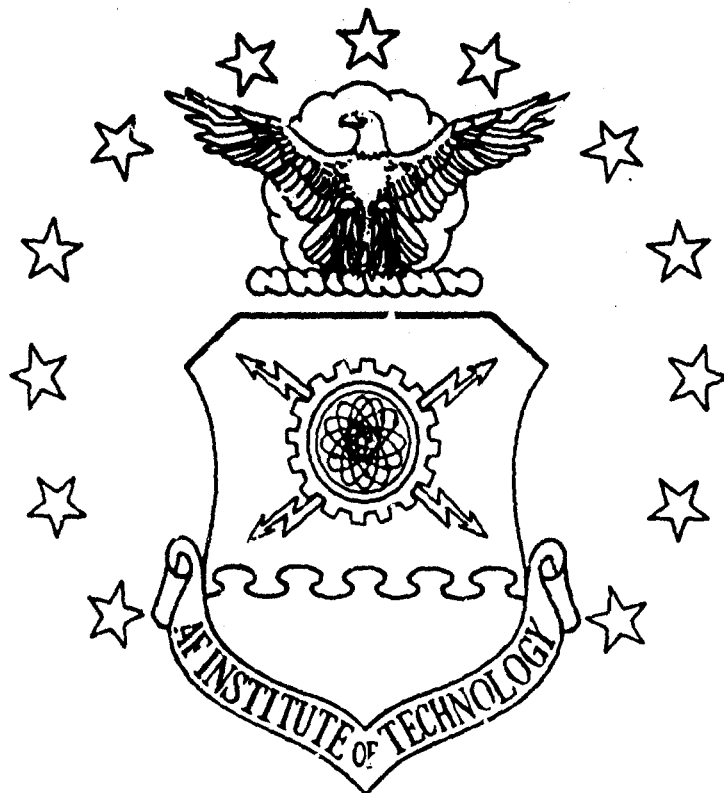AD743404

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13. ABSTRACT This study evaluated the wing/base level financial management reporting system developed as a result of Project PRIME. Seven criteria for evaluation were formulated through comprehensive research of appropriate operational and scholarly literature. Comparison of the management reports of the system with these criteria resulted in the conclusion that the system is inadequate. The primary shortcoming is that the system fails to provide standards and data for management control. Other problems are the failure of the system to relate resources consumed to output produced, excessive use of abbreviations, and the lack of historical information for trend identification purposes.

KEY WORDS:

Management Information System

Resource Management System

PRIME

Reporting System

Management Reports

THE RESOURCE MANAGEMENT SYSTEM: AN
EVALUATION OF WING/BASE LEVEL REPORTS

Captain William K. Deen
Captain Michael P. De Nigris

SLSR-11-72A

THE RESOURCE MANAGEMENT SYSTEM: AN

EVALUATION OF WING/BASE LEVEL

REPORTS

A Thesis

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In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Logistics Management

By

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To get full measure from the resources available
to us, we must have all the necessary management
information. We must have financial systems that
illuminate every level and stage of decision-making:
from the first level supervisor to the President and
the Congress, from the long-range forecast to the
critical post-audit. Nothing less will let us go
forward with programs that provide the most benefit
for the taxpayer's dollar.[1]

--Richard M. Nixon
August 12, 1969

Chapter 1

INTRODUCTION

Problem Definition

In the past few years, leading authorities in

financial management systems have expressed increasing con-

cern over the effective and efficient management of

resources within the Department of Defense (DOD). Robert N.

Anthony made the following comment in a recent address:

The difficulty of defining objectives, of deciding
on the resources required to reach objectives, and of
measuring the efficiency and effectiveness with which
the organizations perform to meet objectives is, I
believe, the most serious management problem in a
nonprofit organization.[2]

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[1]U.S., President, 1969-   (Nixon), Memorandum for
the Heads of Departments and Agencies (Washington: Govern-
ment Printing Office, 1969), p. 1.

[2]Robert N. Anthony, "Can Nonprofit Organizations Be
Well Managed?" speech delivered as Distinguished Men of
Management Lecture, Boston University, February 18, 1971.

The DOD has developed various resource management systems which are oriented to the needs of management at all levels and, at the same time, which provide information required by the Congress, Bureau of the Budget, Treasury Department, and other government agencies.[1] In particular, the Priority Management Efforts System (PRIME) has established a reporting structure to aid operating managers in the utilization of resources available to them in accomplishing their mission objectives at the lowest overall cost to the taxpayer. The essential problem to be considered is the determination of whether or not the management reports currently utilized at Air Force wing/base level are adequate for efficient and effective resource utilization.

Background

Foundations of Resource Management Systems

The development of resource management systems is actually a continuation of efforts begun in 1949. Foundations for the Defense Department's financial management systems were laid by amendments to the National Security Act of 1947 and by the Budget and Accounting Procedures Act of 1950, growing out of the first Hoover Commission recommendations. In addition to establishing the Comptroller of Defense, the National Security Act Amendment of 1949 authorized performance budgeting throughout the DOD. The

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[1]U.S. Department of Defense, Resource Management Systems of the Department of Defense, DOD Instruction 7000.1 (Washington: Government Printing Office, 1966), p. 4.

Budget and Accounting Procedures Act of 1950 enabled the Appropriations Committees to realign the DOD appropriations structure from over one hundred accounts into a streamlined structure of approximately forty accounts grouped into five major categories.[1]

The second Hoover Commission made a further examination of DOD management practices in 1955 and found that the system in use placed emphasis upon the ability of organizational units to expend no more than predetermined ceilings. The Commission further noted that the ability to live within such ceilings was no real gauge of performance and that accounting systems which disclose all costs were essential to effective management. Some of the recommendations of the Commission were subsequently enacted in 1956 as Public Law 863.[2] This act contained three sections pertinent to federal government financial management. First, it required that appropriation requests be developed from cost-based budgets. Second, the act specified support of budget justifications by information on performance and program costs by organizational unit. Third, the act called for the maintenance of accounts on an accrual basis to show resources, liabilities, and costs of operations of each

[1]U.S. Department of Defense, Office of the Assistant Secretary of Defense (Comptroller), A Primer on Project PRIME (Washington: Government Printing Office, 1966), p. 2.

[2]U.S. Department of Defense, A Primer on Project PRIME, pp. 2-3.

agency to aid in the preparation of cost-based budgets.[1]

During this same period, Wilfred J. McNeil, the first comptroller of the DOD, developed what he called a "Performance Type Budget" which provided a basis for most of the concepts that are applied today. Much of the development and implementation of resource management systems can be attributed to the task begun by Mr. McNeil.[2]

In 1961, under Secretary of Defense Robert S. McNamara's direction, Assistant Secretary of Defense (Comptroller) Charles J. Hitch implemented the Planning-Programming-Budgeting System. The basic concept of the programming system was to integrate the multi-year planning system and the one year budget system then in use. This was accomplished initially by analyzing the military plans for the next eight years, performing a rough cost estimate, analyzing again and then deciding which forces could be eliminated from the plan. The first five years of the resulting plan were then subjected to a detailed costing exercise resulting in the development of the first five year plan, which served as the basis for subsequent decisions and modifications.[3] These changes helped the DOD make major

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[1]Chauncey H. Dean, Jr., Defense Financial Management (Unpublished preliminary textbook, School of Systems and Logistics, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, 1970), p. 10-8.

[2]U.S. Department of Defense, A Primer on Project PRIME, p. 3.

[3]Calvin R. Nelson, "The Planning-Programming-Budgeting System - Updated," Speech delivered before the Senior Service School, Financial Management Symposium, July 8, 1969.

strides forward in the systematic identification of objectives and determination of resources required, but they did not directly affect the operating management of resources. This, now, is the task of resource management systems.

Resource Management Systems in the DOD

Resource management systems include "all procedures for collecting and processing recurring quantitative information that (1) relates to resources and (2) is for the use of management." Resources as mentioned here include men, materials, services, and money. All non-systems such as one-time collections of data, submission of test reports, and exchange of correspondence are excluded from this definition.[1]

DOD resource management systems include the following:

1. Programming and budgeting systems.

2. Systems for management of resources for operating activities.

3. Systems for management of inventory and similar assets.

4. Systems for management of acquisition, use, and disposition of assets.[2]

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[1]U.S. Department of Defense, Resource Management Systems of the Department of Defense, pp. 1-2.

[2]Ibid., p. 2.

The primary objectives of the DOD resource management systems are:

1. To provide managers at all levels within the DOD with information that will help them assure that resources are obtained and used effectively and efficiently in the accomplishment of DOD objectives.

2. To provide information that is useful in the formation of objectives and plans.

3. To provide data to support program proposals and requests for funds.

4. To provide a means of assuring that statutes, agreements with Congressional committees, and other requirements emanating from outside the DOD relating to resources are complied with.[1]

DOD Directive 7000.1 further states that systems for management of resources of operating activities will:

1. Focus on outputs and resources used, i.e., expenses.

2. Focus on managers who are responsible for effective and efficient use of resources.

3. Focus on actual performance in relation to planned performance.

4. Use expense operating budgets and accounting as a primary aid in management control at each organizational level.

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[1]Ibid., pp. 2-3.

[2]Ibid., p. 3.

Project PRIME

When Robert N. Anthony was appointed Assistant
Secretary of Defense in 1965, his task was to make major
changes in programming, budgeting, and accounting systems
so that these systems would be more useful to managers at
all organizational levels. This portion of the Resource
Management Systems effort was named Project PRIME.[1,2]
During this same time, a memorandum from President Johnson
urged all departments and agencies to accelerate the pace of
the Joint Financial Improvement program. The memorandum
specifically requested each agency to:

> 1. Assure that financial reports and cost data
> provided adequate support for the planning-programming-
> budgeting system.

> 2. See that the agency's managers are given the
> basic tools they need - responsibility centered cost
> based operating budgets and financial reports - for
> setting and achieving maximum cost reduction goals.[3]

Shortly thereafter, Robert S. McNamara issued the following
instructions to the military departments and other defense
agencies:

> Management reports will be structured in terms
> of organizational responsibility and will relate

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[1]U.S. Department of Defense, A Primer on Project
PRIME, p. 4.

[2]According to Professor Chauncey H. Dean, the
acronym "PRIME" has been dropped from general usage because
its overexposure in the early stages of implementation
negatively affected acceptance of the program by Air Force
managers.

[3]U.S. Department of Defense, Office of the Assistant
Secretary of Defense (Comptroller), Resource Management
Systems: Project PRIME (Washington: Government Printing
Office, 1967), p. 3.

actual performance to planned performance and actual expenses to planned expenses.[1]

Project PRIME and the other management changes that have been made within the DOD in the last two decades have been evolutionary and pragmatic. The nature of defense activities has required innovation and change in the management environment to keep pace with technological advances, changing strategic considerations, and national policy.[2] In recognition of the dynamic defense environment, Project PRIME had the following primary objectives:

1. Integrate programming, budgeting, and accounting through uniform account classifications.

2. Include in a single integrated financial system all the costs each organization incurs in accomplishing its mission.

3. Provide an historical basis for estimating the costs of future programs.

4. Relate inputs, or costs, to the outputs, or benefits, of each organizational unit.[3]

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[1]U.S. Department of Defense, Office of the Secretary of Defense, Memorandum for the Secretaries of the Military Departments, Chairman of the Joint Chiefs of Staff, Director of Defense Research and Engineering, Assistant Secretaries of Defense, Assistants to the Secretary of Defense, and Directors of the Defense Agencies (Washington: Government Printing Office, 1966), June 13, 1966.

[2]U.S. Department of Defense, A Primer on Project PRIME, p. 1.

[3]Conrad P. Peterson, "Project PRIME Update," speech delivered before the Senior Service School Financial Management Symposium, July 8, 1961.

Project PRIME concentrated on operating resources, as contrasted with investment resources. Furthermore, it was concerned with resources that were financed under the Operations and Maintenance and Military Personnel appropriations.[1] The focus of PRIME was on expenses, that is, on the resources consumed by organizational units in carrying out their mission. For many years, the programming system had attempted to show expenses by program element, but the budgeting and accounting systems had not. Numerous problems in the management of DOD resources resulted because of the non-compatibility of these systems. Where functional managers in the conventional budgeting and accounting systems were charged with only 15% to 20% of the resources actually used, the long-range goal under PRIME was to charge an organizational unit with 100% of the measurable expenses that it incurred.[2]

Project PRIME was intended to help the operating managers who actually got the job done and who ultimately decided how resources were to be used. The system was also designed to increase the manager's flexibility in deciding what resources to use. Furthermore, the system meant to encourage managers to think about such things as the best balance between military personnel, civilian personnel,

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[1] Robert N. Anthony, "The What and Why of Project PRIME," speech delivered in the Defense Management Systems Course, Naval Post-Graduate School, Monterey, California, August 5, 1966.

[2] Ibid.

or the optimum degree of mechanization that could be incorporated in his organization. Finally, Project PRIME hoped to motivate managers to be more concerned about the effective and efficient use of resources.[1]

Perhaps the single most important concept developed under PRIME was the matching of the output produced by an activity with the costs incurred (or resources used) in producing that output. The matching of revenues and expenses in industry has for years been meaningful as a performance measurement because revenue is the benefit sought in the incurrence of expenses by a business enterprise. However, standards that are useful in describing and measuring government activity must take on a different form.[2] In the DOD, output measures are currently being developed, tested, and implemented to allow performance evaluation of operating activities.

The significance of this development lies in the fact that operating managers will be able to relate efforts to accomplishments. Specifically, a reporting system that incorporates stabilized and validated output measures permits the manager to:

1. Accumulate costs and performance data over a

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[1] Steven Lazarus, "Planning-Programming-Budgeting Systems and Project PRIME," Defense Industry Bulletin, Vol. 3, No. 1 (January, 1967), p. 31.

[2] Lennis M. Knighton, "Performance Evaluation and the Matching Concept in Government Accounting," The Federal Accountant, Vol. 18, No. 3 (September, 1969), pp. 95-98.

period of time for trend analysis.

  2. Demonstrate improvements in production with consistent relationships to costs.

  3. State precisely what additional resources would be needed to produce a specific change in output.[1]

  Various reporting systems have evolved and are in use within the DOD in order to accomplish the objectives of resource management systems and to otherwise assist managers in the effective and efficient use of resources. This research effort has been directed toward an evaluation of one particular management reporting system within this environment.

The Importance of the Study

  This study was primarily intended to help operating managers gain a better understanding of the background, characteristics, and usefulness of the wing/base level resource management reports that have resulted from Project PRIME. Many managers tend to look upon financial management as just another "thorn in the side," interfering with their day-to-day operating responsibilities. However, the competing needs for our limited resources make it essential that we use them as wisely as possible. Today's operating managers must recognize the value of and know how to use the management reports that are part of the present financial

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[1] Vincent J. Klaus, "Budgeting by Output," _Defense Management Journal_, Vol. 5, No. 2 (Spring, 1969), pp. 42-43.

management systems.[1] Some serious objections have been raised to the new financial management systems concerning a possible conflict between cost-cutting and military responsibilities. Whereas an operating manager's first priority has remained that of carrying out his assigned mission, he can no longer avoid his responsibilities to employ available resources as effectively and efficiently as possible. A defense manager must be able to make the same kinds of informed, cost-effective decisions that any private businessman does. It appears that in the defense environment managers could shave costs in many instances just by knowing what they are, with no compromise whatsoever to mission objectives.[2]

Scope of the Thesis

This study is concerned solely with the management reports that are currently utilized at Air Force wing/base level as a result of Project PRIME. Figure 1 illustrates the wing/base level manager's position within the Air Force organizational structure. Each wing/base is composed of responsibility centers and cost centers. A responsibility center is "an organizational unit engaged in the performance

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[1] Elmer B. Staats, "Potentials for Management Improvement," Defense Management Journal, Vol. 6, No. 4 (February, 1971), p. 7.

[2] "PRIME is Well Underway," Armed Forces Management, Vol. 15, No. 1 (October, 1969), p. 101.
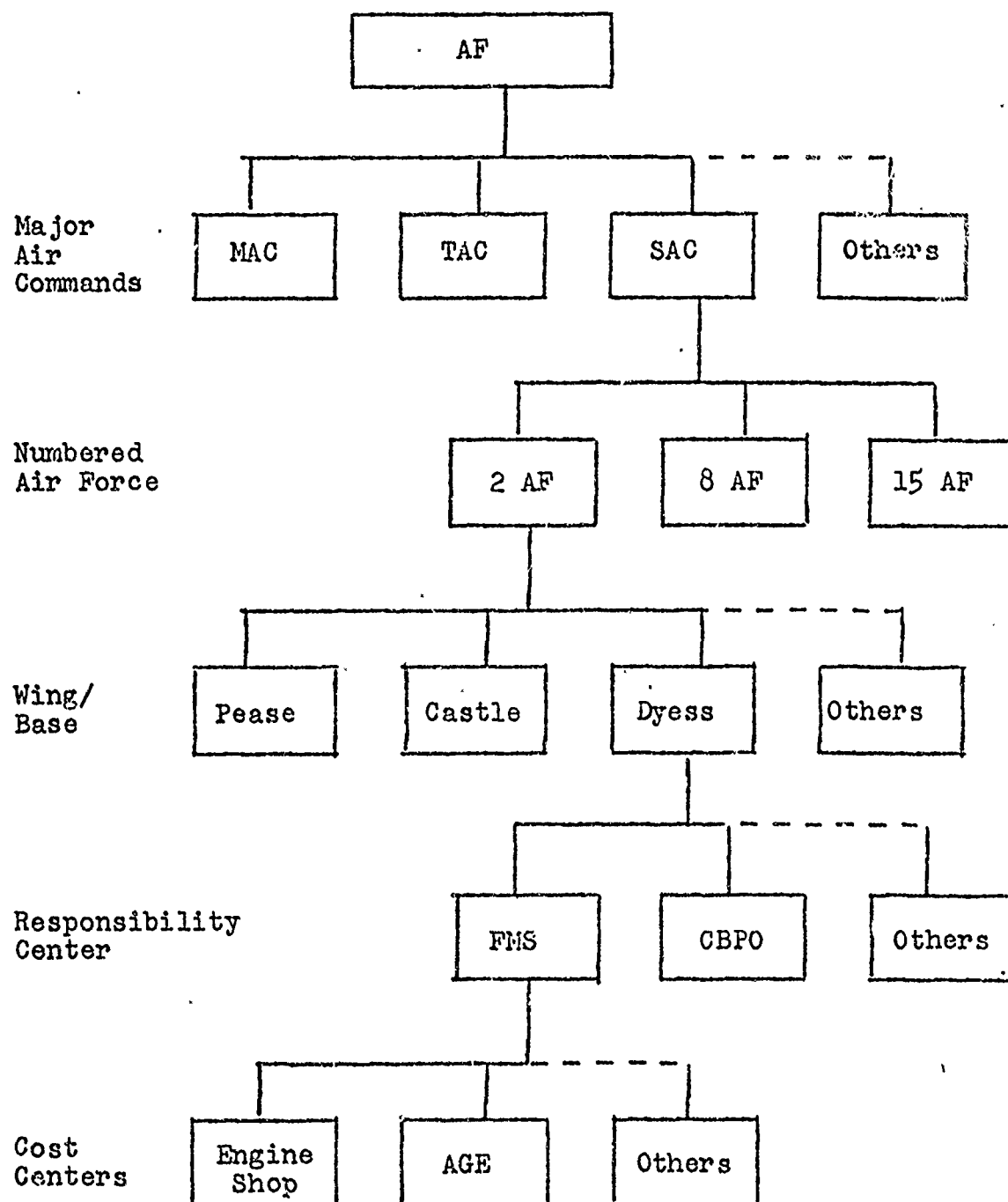
Figure 1

The Wing/Base Level Managers' Position in
a Partial Air Force Organizational Chart

Source: Authors' synthesis of Air Force Directives

of a single function or group of closely related functions having a single head accountable for activities of a unit.[1] A cost center is the finest subdivision of any organizational grouping.[2] Cost centers are subordinate to responsibility centers and are used to identify and accumulate cost data.[3] For example, the Field Maintenance Squadron would represent a responsibility center, and the squadron's Engine Shop and Aerospace Ground Equipment Branch would be two of its cost centers.

The research effort focused on an evaluation of the adequacy of the wing/base level management reports. For the purposes of this thesis, the following definitions apply: adequacy means how well the reports assist managers in the effective and efficient use of resources in accomplishing mission objectives; a manager is a person who is responsible for carrying out a mission or function and who, in doing so, makes decisions that have significant effect on the resources used; effectiveness in the use of resources means that the actual performance of an activity has met with the planned performance; and efficiency in the use of resources means that the output produced by an activity can be related to the

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[1]Gordon Shillinglaw, Cost Accounting: Analysis and Control (Homewood: Richard D. Irwin, Inc., 1961), p. 37.

[2]Ibid.

[3]James I. Chatman and Richard E. Ford, "Elements of Performance Control and Fund Control Financial Management Systems Compared to Elements of Project PRIME" (Master's Thesis, School of Systems and Logistics, 1968), p. 125.

resources consumed in production of that output.[1] Efficiency further implies that, given the situation and environment of the operating activity, the wisest possible use of the resources was made.

The wing/base level management reports to be evaluated may be broken down into two categories: Management Reports from the Accounting System for Operations and Materiel Expense Management Reports. The wing/base level Management Reports from the Accounting System for Operations include the following:

1. Cost Center Report

2. Responsibility Center Report

3. Wing/Base Management Report

A fourth base level report, the Program Element Report, was not included in the analysis since it is used primarily by base budget personnel in the budget administration process.[2]

Along with the management reports listed above, operating managers receive the following Materiel Expense Management Reports:

1. Project Funds Management Record/Organization Cost Center Record (PFMR/OCCR) Status Report and Reconciliation.

2. Project Funds Management Record Report

3. Daily Document Register

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[1]U.S. Department of Defense, A Primer on Project PRIME, pp. 10, 14.

[2]U.S. Department of the Air Force, Resource Manager's Handbook, Air Force Manual 178-6 (Washington: Government Printing Office, 1969), March 31, 1969, p. 4-1.

4. Stock Fund Sales and Returns Analysis

5. Organization Cost Center Due-Out List

6. Organization Cost Center Record List[1]

This thesis was concerned with an evaluation of the above nine reports. Together, these reports comprise the wing/base level resource management reporting system for managers with the Air Force. These nine reports will be referred to as the "Wing/Base Level Reporting System"[2] throughout the remainder of this thesis.

Objectives and Hypothesis

The objectives of this research effort were to:

1. Define the fundamental characteristics that should be found in management reports that aid functional managers in the effective and efficient utilization of resources.

2. Describe the management reports that are currently utilized at wing/base level of the Air Force as a result of Project PRIME.

3. Evaluate through comparison the characteristics of the management reports resulting from Project PRIME with

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[1]U.S. Department of the Air Force, Test and Evaluation of Revised Resource Management System (TERRMS), Air Force Manual 178-X (Test), (Washington: Government Printing Office, 1971), August 31, 1971 (Draft), p. 4-1.

[2]The management reports are not, of course, the only components of the Wing/Base Level Reporting System. The system also includes people, equipment, methods, procedures, and information. Referring to the reports in this manner is done primarily as a matter of convenience.

the fundamental characteristics of management reports that
aid functional managers in the effective and efficient
utilization of resources.

Within this framework, the following hypothesis was
tested:

The current wing/base level management reports
resulting from Project PRIME possess the fundamental
characteristics of management reports that aid
operating managers in the effective and efficient
utilization of resources.

Organization of the Thesis

Chapter 1 has briefly described the evolving
financial management systems of the DOD. Additionally, this
chapter has stated the problem, formulated the hypothesis
and objectives, and limited the scope of the study. Chapter
2 is devoted to the methodology employed in the research
effort. Chapter 3 will provide a framework for the develop-
ment of criteria by which to evaluate the adequacy of the
Wing/Base Level Reporting System by relating information to
the management process. Chapter 4 will examine the nature
and uses of management reports and will develop the criteria
appropriate for evaluating the Wing/Base Level Reporting
System. Chapter 5 will describe and analyze the current
wing/base level management reports. The Wing/Base Level
Reporting System will be evaluated in Chapter 6 by comparing
the evaluation criteria with the characteristics of the
wing/base level management reports. Chapter 7 summarizes
the study and presents the conclusions of the thesis.

Chapter 2

METHODOLOGY

Research Procedure

The Wing/Base Level Reporting System was analyzed
within the general context of an evaluation of a management
information system. Information is the catalyst of manage-
ment and the ingredient that integrates the managerial
functions of planning, operating, and controlling. An
information system is a network of component parts developed
to provide a flow of information to operating managers.[1]
The wing/base level management reports that have been
evaluated are not the only components of a management infor-
mation system. Other components include procedures,
equipment, information, methods to compile information, and
the people who use the information. However, the management
reports are probably the most significant components to the
operating manager since they are the tangible source of
information by which he can evaluate the effectiveness and
efficiency of his operation.

One recognized approach to evaluating a management
information system is in terms of a set of general criteria.[2]

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[1] Joel E. Ross, Management by Information System
(Englewood Cliffs: Prentice-Hall, Inc., 1970), p. 106.

[2] Arthur B. Toan, Using Information to Manage (New
York: The Ronald Press Co., 1968), p. 131.

The general criteria used for evaluation purposes in this
thesis may be defined as the fundamental characteristics of
management reports that aid managers in the effective and
efficient utilization of resources. The essential task
accomplished, then, was the determination of these funda-
mental characteristics so that a comparison could be made
with the characteristics of the current wing/base level
management reports.

Nature and Sources of Information

The study has relied almost totally on a compre-
hensive review of the literature pertaining to the areas
of management reporting and management information systems
for the development of the evaluation criteria. It should
be noted that the literature review was not limited to
strictly defense related sources. Significant emphasis was
also placed on material relating to management information
systems in the commercial sector. This emphasis can be
readily justified despite the differences that exist between
non-profit organizations and profit-oriented compani.s. The
justification lies in the fact that both type organizations
have objectives, make decisions about the use of resources
to accomplish these objectives, and in both cases an im-
portant management function is to see to it that the organi-
zation uses these resources efficiently and effectively.[1]

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[1]Anthony, "Can Nonprofit Organizations Be Well
Managed?", February 18, 1971.

The principal sources of information from within the governmental sector included the directives, instructions, memorandums, regulations, and manuals issued by the DOD and the Air Force. These sources specifically dealt with resource management systems, Project PRIME, financial management, and management reports. Principal sources from the private sector included the numerous texts and articles relating to management information systems, performance evaluation, and general financial management.

Hypothesis Testing

Based upon the criteria for evaluation developed through the literature review, the central hypothesis of this thesis was tested and conclusions were drawn about the adequacy of the current Wing/Base Level Reporting System. Seven specific criteria were formulated from the literature review. These criteria were considered fundamental to a management reporting system that assists managers in the effective and efficient use of resources. Furthermore, these criteria were considered of equal importance for evaluation purposes. For these reasons, it was decided that the Wing/Base Level Reporting System must either fully satisfy or partially satisfy all the criteria in order to accept the hypothesis. With this decision rule, a "partially satisfied" rating would not result in rejection of the hypothesis, however, it would indicate an area of weakness. No attempt was made to determine how many criteria could be

partially satisfied, as opposed to fully satisfied, before the adequacy of the reporting system was substantially diminished.

To test the hypothesis, each report in the Wing/Base Level Reporting System was evaluated against each criterion. In this evaluation, reports were rated "satisfied," "partially satisfied," or "not satisfied." This approach provided for an evaluation of each report, each category, and the system as a whole against each criterion and across all criteria. Failure to satisfy or partially satisfy all criteria resulted in a not satisfied (or failure) rating for reports, categories, or the system as a whole.

Chapter 3

INFORMATION SYSTEMS AND THE MANAGEMENT PROCESS

Introduction

The purpose of this chapter is to provide a frame-
work for the subsequent development of criteria by which to
evaluate the adequacy of the Wing/Base Level Reporting
System. This will be accomplished by relating information
to the management process.

Management has witnessed a virtual "information
revolution" in the past two decades. Organizations today
simply cannot operate efficiently and effectively without
the critical element of information, nor can the functions
of management be performed unless a useful flow of infor-
mation is provided to decision makers.[1] Management infor-
mation systems of various kinds have been designed and
implemented to furnish management with that information
required to carry out their organizational responsibilities.
It is appropriate, therefore, to begin with an examination
of the functions and responsibilities of management.

Functions of the Manager

The responsibilities of management can be defined

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[1]Robert G. Murdick and Joel E. Ross, Information
Systems for Modern Management (Englewood Cliffs: Prentice-
Hall, Inc., 1971), p. 187.

in a broad sense as the guidance, leadership, and control of a group of individuals toward a common objective. This definition indicates a purpose but fails to show how results are obtained. Therefore, it is necessary to define the responsibilities of management in terms of their basic functions.[1] Management is "an act that is performed by man, and that involves the functions of planning, organizing, directing, and controlling."[2] The specific functions have been debated and various authorities have proposed additions and modifications to those listed above. Nevertheless, there is general agreement among management scholars that the functions do, in fact, consist of planning, organizing, directing, and controlling.

Planning is the process of determining what should be done in an organization. It involves selecting the objectives, policies, programs, and procedures for achieving them. Organizing is the process of establishing an intentional structure of roles through determination of the activities required to achieve the objectives, the grouping of these activities, and the assignment of such groups of activities to a manager. Organization also involves a definition of the authority relationships, both horizontal and vertical, in the organizational structure. Directing

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[1]Donald G. Malcolm and Alan J. Rowe (eds.), Management Control Systems (New York: John Wiley and Sons, Inc., 1960), p. 85.

[2]Bartow Hodge and Robert N. Hodgson, Management and the Computer in Information and Control Systems (New York: McGraw-Hill Book Co., 1969), p. 78.

is the process of guiding and supervising subordinates. Controlling is the process of compelling operations to conform to plans. It, thus, involves measuring performance and initiating corrective action when performance deviates from the plan.[1]

Information and Management

Uses and Requirements of Information

Recent studies conducted in the United States and Europe indicate that up to ninety percent of the work involved in any white-collar job involves the seeking and obtaining of information.[2] It would appear, then, that information is a most important aspect of the management process. Reliable information is, in fact, required for every step in the management process. Information is used to establish objectives, to direct the attainment of these objectives, and to measure the results of operations. More significantly, there is no way to measure performance or to appraise results without adequate and accurate information.[3]

Information is inseparable from the management

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[1]Harold Koontz and Cyril O'Donnel, Principles of Management: An Analysis of Managerial Functions (New York: McGraw-Hill Book Company, 1968), pp. 48-50.

[2]Adrian M. McDonough and Leonard J. Garrett, Management Systems: Working Concepts and Practices (Homewood: Richard D. Irwin, Inc., 1965), p. 6.

[3]Henry Blackstone, "Gathering Information," Top Management Handbook, ed. H. B. Maynard (New York: McGraw-Hill Book Company, Inc., 1960), pp. 202-203.

process. One could contend in the practical sense that none of the functions of management could be performed without it. Information helps provide answers to two very basic questions with which every manager should be concerned: "How am I doing?" and "Where am I going?" Specifically, information is used by managers as:

1. A basis on which to make decisions on short-term and long-range plans.

2. An indicator of when things are not going right.

3. A stimulus to take action when it should be taken, and a better basis for deciding what should be done.

4. An incentive for making better plans.[1]

The information needs of various organizations differ and yet, at the same time, have a great deal in common. They differ because the objectives of organizations are different; their sizes, methods and procedures, and technical specialization vary; and their stages of development are not the same. However, management needs for information have much in common because the underlying questions that should be answered are essentially the same. Therefore, one can contend that while information may differ in order and complexity between the large and the small, the new and the old, and the commercial and the governmental, it is all essentially similar in purpose and in kind.[2]

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[1] Arthur B. Toan, Using Information to Manage, pp. iii, 4-5.

[2] Ibid., p. iii.

Value of Information

Management m y be defined as the process of converting information into action. The conversion process is called "decision-making." Management success depends heavily on what information is chosen and how the conversion is executed.[1] Every manager has available to him a large source of information from which he must select and use only that portion which is useful to him. Managers who have experienced the impact of better and faster data processing can testify to the dangers of information indigestion. Many managers have complained of being buried under a sea of reports, facts, and forecasts which they either do not have time to read or cannot understand, or which do not fill their particular needs. One experienced decision maker put it this way:

> If a little learning is a dangerous thing, too much—that is, knowledge not put to good use—can be a costly waste. Too many undigested facts can turn a man of action into a Hamlet, paralyzed by indecision. Like the raw material of industry, information must be converted into something. What is required is a discriminating selection which can deliver relevant data in a form usable at the echelon of decision.[2]

It would seem there is no direct relationship between the quantity of available data and the value of information. Moreover, information is substantially

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[1]Hodge and Hodgson, Management and the Computer, pp. 33-34.

[2]Marion Harper, Jr., "A New Profession to Aid Management," Charles Coolidge Parlin Memorial Lecture, p. 13 (Philadelphia: Philadelphia Chapter, American Marketing Association, 1960).

different from mere data in that data is raw information and can be described as "facts in isolation." Information is meaningful data, whereas data has no intrinsic meaning or significance in itself. While information is basic to all good management decisions and action, it certainly does not insure effective and efficient management. Nevertheless, it can be equally stated that bad information can almost certainly nullify the effectiveness of good management.[1]

An information system has little or no value to an organization unless it is founded upon an adequate management system. The purpose of the management system is to develop plans for achieving organizational objectives, to organize and direct for implementing plans, and to control performance so that actions and results are consistent with plans. The major information needs in performing these processes are shown in Figure 2.[2] The first step, recognition of a problem, is usually prompted by information from the control process which indicates that performance is deviating from plan. Definition of the problem, determination of alternative courses of action, and selection of a course of action are fundamental steps in the decision process. Once a decision is made, it is necessary to implement and control the solution. The process starts over again either

[1] James J. O'Brien, Management Information Systems (New York: Van Nostrand Reinhold Company, 1970), pp. 2-3.

[2] Murdick and Ross, Information Systems for Modern Management, pp. 166-167.

Major Steps in
Management Process

Major Information Needs

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┌─────────────────────┐
│  RECOGNITION OF A   │     (1) Performance against plan
│   PROBLEM OR AN     │     (2) Environmental, competitive,
│    OPPORTUNITY      │         and internal information
└─────────────────────┘         concerning problems and
                                opportunities

┌─────────────────────┐
│  DEFINE PROBLEM OR  │     Evaluation of (1) and (2) in
│  OPPORTUNITY AND    │     order to make a prediction or
│ DEVELOP ALTERNATIVE │     estimate of alternative
│  COURSES OF ACTION  │     courses
└─────────────────────┘

┌─────────────────────┐
│                     │
│      DECISION       │     Prediction of results for
│                     │     alternative courses of action
└─────────────────────┘

┌─────────────────────┐
│   IMPLEMENTATION    │     Communicate details of plan
│     OF PLAN         │     and control standards
└─────────────────────┘

┌─────────────────────┐
│ CONTROL PERFORMANCE │     Performance against plan
│   AGAINST PLAN      │
└─────────────────────┘
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Figure 2

The Management Process and Information Needs

Source: Murdick and Ross, Information Systems for
Modern Management, p. 167.

by a recognition of the need for planning or by the appearance of a new problem as indicated by the control process.[1]

The value of information has usually been determined by a highly subjective evaluation of what the information will do to the behavior of an organization. It is certainly true that one of the weakest areas of managerial judgment is in placing a dollar value on information. Even so, most managers are fully aware that information is the substance from which decisions are made.[2] Information technology directly affects the decision processes by:

1. Quantifying information used for decision purposes.

2. Broadening the scope of each decision and giving it new visibility.

3. Shortening the planning period.

4. Reducing the incidence of poor decisions caused by internal time lags in information flow.

5. Heightening the sense of common goals among managers through the sharing of information.

6. De-personalizing decisions.[3]

Management's interest in information is largely utilitarian and practical. Managers want to know if the

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[1]Ibid.

[2]Hodge and Hodgson, Management and the Computer, p. 18.

[3]George P. Schultz and Thomas L. Whisler (eds.), Management Organization and the Computer (The Free Press of Glencoe, Illinois, 1959), pp. 9-10.

information system will aid them in making the decisions and taking the actions which will result in more effective and efficient operations. Whether the information provided performs this function satisfactorily or not depends, to a great extent, upon its relevance to management's problems and management's willingness and ability to use it.[1]

Information and the Functions of Planning and Control

Information technology has its most significant impact on the planning and control functions of management. The types of information which managers require must be related to their planning and control functions. The planning function is concerned with the establishment of realistic objectives, with the formulation of alternative strategies for realizing the objectives, and with the determination of a course of action from the available alternatives. The control function is concerned with measuring performance, isolating variances, and taking corrective action.[2]

Planning is the procedure through which an organization consciously selects goals and then budgets resources to accomplish these goals. The development of policies, procedures, and functional plans is implicit in this process. Planning involves the use of information to assemble and

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[1]Toan, Using Information to Manage, p. 133.

[2]Peter P. Schorderbek, Management Systems (New York: John Wiley and Sons, Inc., 1968), p. 45.

evaluate alternatives and to make decisions. It entails deciding in advance what, how, when, and who is going to accomplish the organizational objectives. A management information system should directly support the planning process. The information system should provide background information on prior accomplishments, current planning factors, resources, and other information required for the analytical phase of planning.[1] The following steps are involved in the planning process: (1) identifying the tasks to be performed within the time frame of the plan, (2) resolving conflicts between these tasks through coordination, (3) specifying the extent to which each task is to be performed (expressed in some unit of measure), (4) assigning personnel to tasks, and (5) allocating resources for the accomplishment of each task.[2]

Control is the process in which management seeks to compel operations to conform to plans.[3] Fayol said this about control:

> In an undertaking, control consists in verifying whether everything occurs in conformity with the plan adopted, the instructions issued and principles established. It has for object to point out weaknesses and errors in order to rectify them and prevent recurrence. It operates on everything, things, people, actions.[4]

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[1] O'Brien, Management Information Systems, p. 62.

[2] Thomas R. Prince, Information Systems for Management Planning and Control (Homewood: Richard D. Irwin, Inc., 1970), p. 113.

[3] Billy E. Goetz, Management Planning and Control (New York: McGraw-Hill Book Co., 1949), p. 229.

[4] Henri Fayol, General and Industrial Management (New York: Pitman Publishing Corporation, 1949), p. 107.

The control process consists of (1) the adoption of a plan, (2) reporting actual performance as compared with the plan, and (3) making decisions and taking action.[1]

To a great extent, controls in business are financial. Financial measurements summarize, through a common denominator of dollars, the operation of a number of plans. Furthermore, they indicate total expenditure of resources in reaching objectives. Financial measurements are equally valid for governmental enterprises since any responsible manager must have some way of relating his goal achievement to his costs in terms of resources. Therefore, in all forms of enterprise, control is likely to be financial.[2]

Management Information Systems and Decision-Making

The managerial task is one of making decisions about the allocation of scarce resources to accomplish an objective.[3] The terms "information system" and "management information system" are frequently used to describe information networks that provide relevant, timely, and accurate information to management for decision-making purposes.[4] It may be said

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[1]B. C. Lamke and James D. Edwards (eds.), _Administrative Control and Executive Action_ (Columbus: Charles E. Merrill Books, Inc., 1961), p. 9.

[2]Koontz and O'Donnell, _Principles of Management_, p. 695.

[3]John F. Stanhagen, Jr., "Swamped with Data--Starved for Information" (paper presented at the Joint Seminar on "Professionalism in Production and Inventory Management," Weber State College, Ogden, Utah, October 9, 1971).

[4]Prince, _Information Systems_, p. 40.

that the basic task of any information system is to supply
the organization's decision-makers with the information they
need in order to make decisions.[1,2] In terms of the planning
and control functions, the decision-making process consists
of the formation of a set of concepts indicating desired
conditions, the observation of what appears to be the actual
conditions, and the generation of corrective action to
achieve the desired conditions.[3]

In an actual operating environment, much of what the
manager does and what he learns results from a process of
trial and error. The manager takes some action and then
observes the results; this is feedback in the sense of
action and reaction. The primary reason a manager uses
feedback is so that he can make comparisons. The essence of
a decision is comparison, and comparison is possible only
when alternatives exist. The success of any management in-
formation system depends to a large degree on the identifi-
cation and use of explicit criteria as a basis for making
comparisons. Criteria represent selected bench marks to be
used for making comparisons and may be variously defined as
a standard of judgment, a standard of measurement, a basis

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[1]Richard W. Brightman, Information Systems for Modern
Management (New York: The MacMillan Company, 1971), p. 22.

[2]K. R. Finn and H. B. Miller, "Is Your MIS Fit for
Human Consumption?" Industrial Engineering, III (November,
1971), p. 20.

[3]Hodge and Hodgson, Management and the Computer,
p. 36.

for choosing, or a bench mark for guidance.[1]

Summary

Information is a vital tool that is inseparable from the management process. It is the basis of all management decisions and actions. The basic task of any information system is to supply the managers of an organization with the information they need in order to make decisions. Information has its most significant impact on the planning and control processes. The types of information which managers require must be related to their planning and control functions.

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[1]McDonough and Garrett, Management Systems, pp. 184-186.

Chapter 4

CRITERIA FOR EVALUATION OF THE WING/BASE LEVEL MANAGEMENT REPORTING SYSTEM

Introduction

The purpose of this chapter is to develop appropriate
criteria by which to evaluate the adequacy of the Wing/Base
Level Reporting System. The criteria to be developed are,
in effect, the characteristics which should be found in a
reporting system that aids managers in the effective and
efficient use of resources.

Management reports are the physical output of an
information system and are intended to provide information
to management for decision-making purposes. An information
system normally produces several reports for each level of
management since managers need a wide range of information
on which to base decisions. It is appropriate to briefly
examine the features of management reports prior to de-
veloping the evaluation criteria. Following this analysis,
the criteria to be used in evaluating the Wing/Base Level
Reporting System will be formulated. The criteria will be
based upon material already presented on information systems
and the management process as well as the following dis-
cussion.

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The Nature and Uses of Management Reports

Management reports are only one element of an information system. However, they are probably the most important part to the manager since they provide him with the information he needs to make decisions. The outputs of a management reporting system provide the inputs into the planning and control processes of management. The reporting system, then, is the tangible link between management talents and management systems.[1]

Reports convey control information to the managers who are responsible for various activities within an organization. Effective reports can greatly facilitate the task of management. A reporting system with timely, accurate outputs enables managers to remain abreast of operations and provides a basis for decision-making. Reports, by telling a manager what has occurred, also provide him with a sound basis for planning.[2] Figure 3 points out the place of management reports in a management information system for planning and control. The management reporting system should track the status of the output relative to a predetermined standard of performance for the transformation process. The transformation process is the conversion of manpower, money, material, and equipment resources by the organization into products or services. If operating

[1]McDonough and Garrett, Management Systems, pp. 28-29.

[2]Louis A. Allen, The Management Profession (New York: McGraw-Hill Book Co., 1964), p. 333.
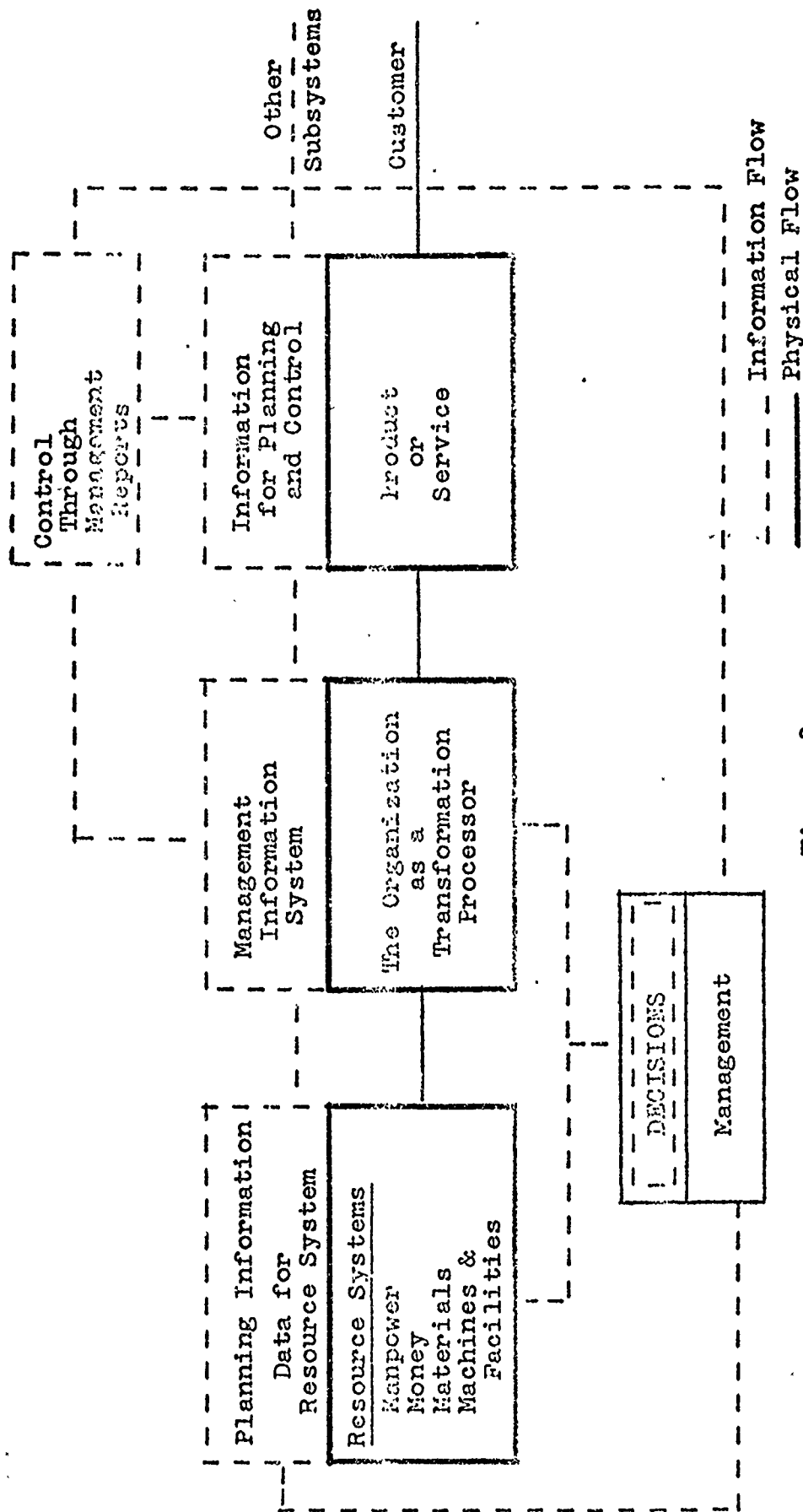
Figure 3

A Management Information System for Planning and Control

Source: adapted from Murdick and Ross, Information for Modern Management, p. 164.

results do not conform to standard, management should make decisions regarding one or both of two actions: (1) alternative resource allocations are made as system input changes, or (2) modifications are made in the transformation process.[1]

Management reports may be classified as planning reports, control reports, or operating reports. The essential differences between the three types may be enumerated as follows:

1. Planning Reports - The basic objective of the planning report is to evaluate the organizational position with other comparable entities. Also included are the alternatives available to management.

2. Control Reports - The basic objective of the control report is to inform top management of functional operating performance as compared to predetermined performance standards.

3. Operating Reports - The basic objective of the operating report is to inform functional management of the current performance of operations. This report structure normally includes a comparative analysis of current operations and operations for a previous period, as well as current performance compared to predetermined performance standards.[2]

In practice, the responsibility for management

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[1] Murdick and Ross, Information Systems for Modern Management, pp. 163-165.

[2] Malcolm and Rowe, Management Control Systems, pp. 89-90.

planning and control increases as the top echelons of management are approached. Operational control, on the other hand, receives its greatest emphasis at the wing/bas level. It should be noted, however, that planning and control responsibilities are inherent in every level of management. The distinction lies in the emphasis on the nature and degree of the planning and operational control responsibilities found at each distinct level of management.[1]

An essential link between the management reporting system and decision-making is the process of interpretation. Unfortunately, a manager's decision-making capabilities are often governed by how patient he is in sifting through detailed reports in search of exceptions. It may also depend on how skilled he is in interpreting a mass of information that pertains to other activities as well as his. It is important in today's dynamic environment that management reports present the exceptions to both conserve the manager's time and aid him in decision-making.[2] Effective reports ordinarily are designed so that attention is focused on areas where performance differs significantly from standards.[3] Though Fredrick W. Taylor is generally credited

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[1] Ibid., pp. 89-90.

[2] R. O. Boyce, Integrated Managerial Control (New York: American Elsevier Publishing Company, Inc., 1968), p. 19.

[3] "Tentative Statement of Cost Concepts Underlying Reports for Management Purposes," The Accounting Review, XXXI, 2 (1956), 187-189.

with first stating the "exception principle,"[1] it was clearly stated circa 1400 B.C. when Jethro instructed Moses, ". . . that every great matter they shall bring unto thee, but every small matter they shall judge . . . ."[2]

The basic purpose of a report is to show a manager what is actually happening in the accomplishment of established plans. However, simply showing a manager what has happened as of a given moment in time is not very helpful. The report should also bring to his attention a clear picture of related performance in the past. This calls for trend reporting so that current operating results can be related to previous experience. Furthermore, information will be most meaningful if it applies specifically to the manager's own area of accountability.[3]

The Wing/Base Level Management Reporting System Criteria

The criteria which will be used to evaluate the Wing/Base Level Reporting System are stated in this section. These criteria are characteristics which should be found in a reporting system that aids managers in the effective and efficient use of resources. The seven criteria which follow

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[1] Ralston B. Daily and John W. Paul, "Criteria for and Determination of the Adequacy of the Existing Maintenance Management Information System for Base Level Managers" (Master's Thesis, School of Systems and Logistics, 1969), p. 17.

[2] Exodus 18:22.

[3] Allen, The Management Profession, pp. 333-335.

were drawn from material presented thus far pertaining to information systems, the management process, and management reports.

1. The Reporting System Should Provide Timely Information to the User

The need for timeliness varies according to the nature of the information being reported. Information of a routine, low-impact nature does not have to be reported as quickly or as often as information that is significant and vital to successful operations. For example, a continuous production system such as a continuous flow chemical oper- ation would require a near constant flow of current infor- mation since an undetected problem at any point could cause a costly shutdown of the entire system or, worse yet, a physical disaster. On the other hand, a daily, weekly, or even monthly information flow may be adequate for an inter- mittent production system such as a job order shop where undetected problems are not so critical since a bottleneck at one point would not necessarily adversely affect the rest of the operation. Timeliness, then, is a criterion which is relative to the management task at hand. Consider this example from the military. An officer manager may find monthly financial reports adequate for funds control during the course of the year. However, as the end of the fiscal year approaches, he may need the same reports on a daily or weekly basis to insure that he does not overexpend his budget.

Timely reports are particularly important for control purposes. Buffa has noted that the inherent speed of computer based information systems makes it possible for management to have the most up-to-date information available in the various reports. Furthermore, he observes that the reduction of information time lags to a minimum makes managerial decisions pertinent to the current problem, rather than to some problem that existed but the conditions for which may have already reversed.[1]

2. The Reporting System Should Provide Accurate Information to the User

The information provided to the manager in reports must be accurate. Management decisions and actions will almost surely be wrong if they are based on inaccurate information. Inaccuracy can come about at any point in the system from data collection to report preparation. The interest in this research is not on the cause of inaccuracy but the degree in the final report. Accuracy does not mean 100 percent accuracy, for such a condition is often either not possible to attain or not worth the time or cost to attain it. The information must be accurate only to the extent that it sufficiently serves its purpose.[2] For instance, civil service employees may take leave in hourly increments; but for the manager concerned about manpower scheduling, reports expressing leave status in days should be accurate enough for

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[1] Elwood S. Buffa, Modern Production Management (New York: John Wiley and Sons, Inc., 1969), p. 240.

[2] Toan, Using Information to Manage, p. 8.

management purposes. Similarly, it is seldom necessary to report exact dollars and cents figures on cost control reports. Dollar figures only are normally sufficient for management purposes and, for very large operations, figures rounded off to tens, hundreds, or even thousands are often appropriate.

3. The Reporting System Should Provide Understandable Information to the User

Management reports are communication devices intended to aid managers in making decisions. Specifically, reports should convey information about the objectives that management wishes to achieve, the methods used to achieve these objectives, and the performance of the organization in pursuit of these objectives. A manager must be able to understand the information transmitted in reports. Otherwise, the information would just be useless data.

Understandability can be facilitated by the physical manner in which the information is presented and by the terminology incorporated into the reports. Anyone who has struggled through a report filled with acronyms and codes can readily see how clear text would greatly improve the understandability of the material. Another hazard to be considered is reliance upon accounting and financial terminology, which may have special significance to the accountant but only vague familiarity to the manager using the reports.[1] Reports are often difficult to understand as

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[1] Allen, The Management Profession, p. 336.

a result of the inherent difficulty of the subject matter,
or from the fact that they are overly complex or poorly
constructed. There is a natural and logical tendency to
make the reports more understandable, but this should be done
only within practical limits. There is a point at which
attempts to simplify should cease and the manager should act
to increase his capacity for understanding the information
presented in reports.[1]

4. **The Reporting System Should Provide for Measurement
    of the Activity Being Managed**

Peter F. Drucker sees measurement as one of the
basic elements in the work of the manager.[2] The manager
must analyze and appraise organizational performance and
then make decisions based on his interpretation of the situation. However, he must measure the actual performance of
the organization before he can make analyses and appraisals.
It is not too difficult to measure certain activities such
as man-hours expended or pounds of raw material consumed in
a certain production process. On the other hand, there are
many areas in which it is extremely difficult to make
meaningful measurements. For instance, the establishment
and use of meaningful measures for the morale of employees,
the quality of management, or the reputation of the organization is a formidable task.

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[1]Toan, Using Information to Manage, p. 6.

[2]Peter F. Drucker, The Practice of Management (New
York: Harper and Brothers Publishers, 1954), p. 343.

There are many different units in which transactions or events may be expressed. Management can measure the output of a mine in tons, the work of an employee in hours, the output of a machine in product units, or the use of electricity in kilowatt-hours. The performance of an activity is frequently measured in financial terms, however, even though there are many measurement units that could be used to convey the same information.[1] Financial or dollar measurement is a natural basis for control since many inputs and outputs of an activity are easily expressed in the common denominator of money. Expenditures for personnel, materials, facilities, and equipment are always an important factor against which to weigh results, and these are frequently reflected in expenditures of money.[2]

The reporting system must provide a measure of the performance of the activity regardless of which particular measurement units are employed. This is because the results of measurement, when properly summarized and presented in management reports, form the basis for feedback into the planning and control process to achieve better future planning and control.[3]

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[1] William J. Vatter, Accounting Measurements for Financial Reports (Homewood: Richard D. Irwin, Inc., 1971), p. 4.

[2] Koontz and O'Donnell, Principles of Management, p. 638.

[3] Daily and Paul, "Determination of the Adequacy of the Existing Maintenance Management Information System," p. 60.

5. The Reporting System Should Provide Information for the Planning Process

Planning is the most basic and pervasive management function. Managers at all levels plan, and the success of the other management functions depends upon it. Managers must plan for the allocation of resources and the work of other people, in contrast to the nonmanager who plans only his own activities.[1]

Planning involves making a prediction about the conditions of a future environment and deciding where and how the organization should proceed. The decisions made in the planning process invariably have future implications, particularly regarding the commitment of resources and organizational strategy.[2] Basically, planning involves five processes:

1. Establishing objectives.

2. Developing planning premises.

3. Determining alternative courses of action.

4. Evaluating alternative courses of action.

5. Choosing from the various alternatives.[3]

Planning premises are those data, facts, and information that influence alternative courses of action. They provide the critical planning assumptions and the constraints that

[1]Ross, Management By Information System, p. 72.

[2]David I. Cleland and William R. King, Systems Analysis and Project Management (New York: McGraw-Hill Book Company, 1968), p. 93.

[3]Ross, Management By Information System, p. 108.

surround the selection and evaluation of alternatives.[1] The development of planning premises and all subsequent steps depend entirely upon the availability and utilization of critical planning information. A manager cannot successfully develop plans without first gathering the necessary planning premises that permit an adequate evaluation of alternative courses of action to achieve the plan.[2] The reporting system should facilitate the planning process by providing information on prior accomplishments, current operating performance, resource levels and usage, financial position, and other similar factors necessary for the development of planning premises.

6. **The Reporting System Should Provide Information for the Control Process**

Massie states that control is the process that measures current performance and guides it toward some predetermined goal. He also notes that the essence of control lies in comparing current performance against some desired results determined in the planning process.[3] The information required for control is different in type and characteristic from information needed for planning. Planning places greater emphasis on structuring the future, whereas control is based more on the recent past and current

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[1]Ibid., pp. 78, 108.

[2]Ibid., p. 109.

[3]Joseph L. Massie, Essentials of Management, (Englewood Cliffs: Prentice-Hall, Inc., 1971), pp. 6, 87.

operations.[1]

The essential elements of control are:

1. A predetermined plan.

2. A means of measuring current activity.

3. A means of comparing current activity with a criterion or standard.

4. A means of correcting the current activity so as to achieve the desired result or to modify the plan.[2] The basis for control is the measurement of the organization's performance. However, performance measurement alone is not sufficient for managerial control and decision-making. Given that a reporting system provides the manager with timely, accurate, understandable information, and measures the performance of the activity, a basis of comparison is still needed to answer the question: "How am I doing?" The manager needs something to which he can compare the facts and draw conclusions. The reporting system will merely provide data, not information, if there is no comparison to forecasts or other parameters in the reports. In such a case the manager is required to construct parameters intuitively each time he examines the reports in order to make judgments about the performance of his organization. It may be said, then, that the manager must really ask himself the question: "How am I doing - compared to what?"[3]

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[1] Ross, <u>Management By Information System</u>, p. 114.

[2] Massie, <u>Essentials of Management</u>, pp. 87-89.

[3] Toan, <u>Using Information to Manage</u>, p. 11.

Ross defines a standard of performance as "a statement of conditions existing when a job is performed satisfactorily."[1] Standards provide a basis for comparison in evaluating the performance of an activity. It is best that standards be stated explicitly. For this reason, quantitative statements are usually preferable. Standards represent the expression of planning goals in such terms that the actual accomplishments of assigned duties can be compared against them. They may be physical representations such as quantities of output, units of service, man-hours, volume of rejections, etc.; or they may be stated in monetary terms such as costs, revenues or investments; or they may be expressed in any other terms which measure performance.[2]

Performance standards are important to an effective reporting system for several reasons. First, they highlight variances from the plan and allow the manager to focus his attention on areas that require immediate action. Second, standards facilitate the self-development of the manager. By using standards the manager can identify and correct his own performance, thus minimizing the need for his superiors to dwell upon his deficiencies. Because standards are impersonal, they provide an objective and noncritical basis for encouraging personal improvement in management.[3]

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[1]Ross, Management By Information System, p. 87.

[2]Koontz and O'Donnell, Principles of Management, p. 640.

[3]Allen, The Management Profession, pp. 327, 337.

Finally, the analysis and evaluation of information resulting from comparisons made through standards is the prime source of indication that it is necessary to determine an appropriate measure of change and inject it into the planning and control progress. Change is required either to correct standards which are inappropriate or correct situations which are preventing the achievement of standards.[1]

The reporting system should facilitate the control process by supplying the manager with information on performance compared to plan or standard. In doing so, exceptions should be highlighted so that the manager will be alerted to evaluate the situation and take action if necessary.

7. The Reporting System Should Provide Information on Trends

The purpose of a reporting system is to show managers what is actually happening in the accomplishment of established plans. However, the reporting system must do more than show what has happened at a given moment in time. It must also bring to the manager's attention a clear picture of related performance in the past. This calls for trend reporting so that current performance is shown in its proper relationship to previous experience.

Trend information will hopefully provide the manager

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[1] Daily and Paul, "Determination of the Adequacy of the Existing Maintenance Management Information System," p. 61.

with the answers on how to stop or correct something before it goes wrong.[1] The manager can see just how good his policies, decisions, and actions really are by analyzing trends. Moreover, he gets from this analysis an indication of whether they should be retained or changed to be more effective and efficient in the future. For instance, the manager is alerted to a potential problem when he notes that he expended more of a certain resource than planned during the reporting period. Further investigation may reveal that the out-of-tolerance situation is a temporary fluctuation with justifiable reasons for occurring. On the other hand, the manager may find it to be a real problem requiring corrective action to align performance with plan. In either case, observation of the trend of expenditure in future periods will either substantiate or negate the manager's findings and actions.

Summary

This chapter was devoted to developing the appropriate criteria by which to evaluate the adequacy of the Wing/Base Level Reporting System. The criteria that have been developed are characteristics which should be found in a reporting system which aids managers in the effective and

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[1] John F. Stanhagen, Jr., "Management Information Systems: What Should Be Done?" (paper presented at the Sixth Annual Convention at the Society of Logistics Engineers, August 26-27, 1971, Philadelphia, Pennsylvania).

efficient utilization of resources. The reporting system should provide for each of the following characteristics:

1. Timely information.

2. Accurate information.

3. Understandable information.

4. Measurement of activity.

5. Information for planning.

6. Information for control.

7. Information on trends.

The criteria have purposely been developed in general form in order that they may be applied to the evaluation of any management reporting system.

Chapter 5

DESCRIPTION OF THE CURRENT WING/BASE MANAGEMENT REPORTS

Introduction

The purpose of this chapter is to describe the
wing/base level financial management reports prepared as a
result of Project PRIME. These descriptions will provide a
basis for the evaluation of the Wing/Base Level Reporting
System. A thorough understanding of the nature, structure,
and uses of the reports in this system is necessary in order
to complete the analysis. As a result, the material in this
chapter is presented in a very detailed and technical manner.
Readers who are familiar with the details of the nine reports
being evaluated in this thesis may desire to proceed di-
rectly to the evaluation in Chapter 6.

Management reporting systems contain formalized
reports that seek to communicate information to the respon-
sible individual, the manager.[1] Such a system can be de-
fined as:

> . . . a combination of systems components that
> function within the organization to process data and to
> provide the information and internal control needed by
> management to carry out its responsibilities of

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[1] J. B. Bower, R. E. Schlosser and C. T. Zlatkovich,
Financial Information Systems: Theory and Practice (Boston:
Allyn and Bacon, Inc., 1969), p. 33.

stewardship over the assets, of control over operations, and to plan future enterprise activities.[1]

Thus, the guiding principle in the design of such a management information system must be the manager, his duties and responsibilities, the decisions he is required to make, the latitude and authority he possesses, and the information he needs to make decisions.[2]

Managers are characteristically faced with problems dealing with the input of various resources in producing organizational outputs. The resources available to the manager normally have alternative uses with relative costs associated with each use. The outputs that result from the various alternatives are of different values to the organization. The manager should aim first at the attainment of the outputs for which he is responsible (effectiveness), and second at minimizing the costs associated with a given benefit, or at maximizing the benefit associated with a given use of resources (efficiency).[3] Thus, managers should attempt to be both effective and efficient in the use of resources.

Air Force wing/base level managers are provided with reports that are intended to assist them in the effective

[1]Ibid., pp. 8-9.

[2]Frederick W. Shipman, "Designing M.I.S. for Managers," Journal of Systems Management, Vol. 20 (July, 1969), p. 15.

[3]David W. Miller and Martin K. Starr, The Structure of Human Decisions (Englewood Cliffs: Prentice-Hall, Inc., 1967), p. 7.

and efficient use of resources and in the administration and control of their operating budgets. The Wing/Base Level Reporting System is broken down into two categories of reports: Management Reports from the Accounting System for Operations and Materiel Expense Management Reports. The Management Reports from the Accounting System for Operations deal with operational aspects of the Air Force by accounting for funds made available under the Operations and Maintenance Appropriation and the Military Personnel Appropriation.[1] The wing/base level management reports provided by the accounting system include the following:

1. Cost Center Report

2. Responsibility Center Report

3. Wing/Base Management Report

Along with the management reports listed above, operating managers receive the following Materiel Expense Management Reports:

1. Project Fund Management Record/Organization Cost Center Record (PFMR/OCCR) Status Report and Reconciliation

2. Project Fund Management Record Report

3. Daily Document Register

4. Stock Fund Sales and Returns Analysis

5. Organization Cost Center Due-Out List

6. Organization Cost Center Record List

The approach used in the actual description of the

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[1]U.S. Department of the Air Force, TERRMS, AFM 178-X, p. 2-7.

reports is one of identifying the purpose of the report, the frequency at which it is produced, and the significance of the information presented in the report. Illustrative figures of the reports will supplement the narrative description. Some duplication in content and style exists among the reports since they are designed to support both cost center and responsibility center managers. Where this occurs, the latter report descriptions will not repeat explanations. The review of the reports is accomplished by first identifying potential problem areas from the illustrative report figures. Next, these problem areas are further defined or dismissed by attempting to pursue a series of pertinent questions the manager should seek to answer. It is not the intent of this approach to develop a series of "hard and fast" rules for locating adverse variances and making decisions on the appropriate corrective actions. The intended objective of any management report is to identify when or where action should be taken--not what corrective action should be taken. If the reports could answer when, where, and what, there would be no need to have the wing/base level managers in the first place. Moreover, it is the manager's function to make decisions concerning the allocation of scarce resources and the management reports' function to identify how these resources are being consumed.

The comparison of actual expenses versus programmed expenses as a measure of efficiency of the operating activity

is essential to the successful analysis of the wing/base management reports. The mere fact that a variation exists does not necessarily mean that there is a problem. The variation may be perfectly justified and acceptable depending on such factors as the time period involved, the responsible cost center, the actual expense element involved, the total dollar amount of the variation, seasonal production or demand, unprogrammed flying, contractual service delays, or the logic of the expense program phasing. The key point is that a potential problem area has been discovered warranting further investigation in order to determine whether or not an actual unfavorable situation exists.

The Management Reports from the Accounting System for Operations and the Materiel Expense Management Reports will be individually described. The first of the Management Reports from the Accounting System for Operations to be described is the Cost Center Report.

<div align="center">

Management Reports From the Accounting System

for Operations

</div>

Cost Center Report

The Cost Center Report is normally produced monthly, but can be made available upon request. A facsimile is displayed in Figure 4. This report is the basic management expense report in the series displaying for the cost center manager the actual expenses incurred to date in relation to the approved phased program by element of expense. Three

Figure 4

Cost Center Report (Sample)

Source: Training Manual for Project TERRMS, AFM 178-X, p. 4-6.

Annotation labels:

- Cut off date for data reported
- Year to Date Expense as a % of Annual Expenses Authorizations
- Norms
- Year to Date Expense as a % of Cum Auth thru EOQ.
- Operating Agency Code/Operating Budget Account Number Identifies Operating Budget against which expenses are accumulated.
- Difference between Year to Date and Cumulative Authorization Thru EOQ (May be negative)
- Total phased expense authorization thru end of quarter
- Cost Center Code and Title
- Sales Code for Reimbursable Expenses
- Expense Element Description
- Sub Total of Each Major Expense Category
- Gross Expense Includes Direct and Reimbursable Expenses and Service Distribution
- Gross Expense Adjusted for Service Credits
- Total Expense Adjusted for Earned Reimbursements

major element subtotal groupings are provided for the
manager's initial overall review of the status of the cost
center and are entitled "Gross Expense," "Total Expense,"
and "Direct Expense," respectively. "Gross Expense" sub-
total represents the total direct and reimbursable expense
as well as the service distribution expenses. The "Total
Expense" represents the elements of the "Gross Expense" and
the service unit cost credits. "Direct Expense" subtotal is
composed of the "Total Expense" less any reimbursable ex-
penses. If within a cost center there are no reimbursable
expenses or service unit cost distributions, all three sub-
totals would reflect the identical amounts as is the case in
Figure 4.

Direct expenses are those costs incurred in the
performance of an organization's operations for which they
must expend funds. Reimbursable expenses are those costs
that are incurred by the wing/base for the specific support
of another organization using the same facilities. These
costs are paid back to the wing/base by the responsible
level of the other organization incurring the expense.
These expenses are a direct result of the host-tenant
relationships common to almost all wings and bases. A
service unit, under the concepts of the Accounting System
for Operations, is an organizational unit which is not
financed by a revolving fund and which provides measurable
services to other organizational units or activities at an

installation.[1] For example, the Motor Pool does not operate under a fund as the Supply activity does, yet both agencies provide measurable services which must be expensed to other organizations. Payment to Supply is reflected in stock fund expenses, while payment to the Motor Pool takes the form of service unit costs. Thus, service unit cost credits are obligations incurred by the organization and for which a later payment must be made. The exact amount of the expenses is determined at a later date and an appropriate amount is charged to each user agency.

The two most significant columns for identification of potential problem areas are the "Cumulative Percent of Authorization Through the End of the Quarter" (Cum % EOQ) and the respective "Percent of Annual" (% Ann) authorization of funds. Although not directly reflected on the report itself, the normal respective percent of the quarter and year standards are readily available from the base budget officer upon request. For illustrative purposes the appropriate normal percentages appear in the circles at the top of the related columns in Figure 4. In reviewing the "Direct Expense" row, one can see that the expenses to date represent 69% of the total phased expense authorization through the end of the second quarter. Since four months

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[1] U.S. Comptroller General (Staats), Comptroller General's Report to the Congress, Implementation of the Accounting System for Operations in the Department of Defense, B-159797, April 12, 1968 (Washington, D.C.: 1968), p. 33.

have elapsed from 1 July 1970 through 31 October 1970, and since the cumulative authorization is based on a six month period (through 31 December 1970), two-thirds or 67% would represent the normal level at which expenditures should be. Thus, approximately $31,000 over the allotted $175,052 would be required to operate if the current trend of expenditures were to continue at the same rate. However, only after a thorough review of each element of expense can it be determined whether or not this variance is a problem worthy of further analysis or supervision by the manager. Even if the total "Direct Expense" row had been at the normal level, the manager should still skim the individual line entries to insure that no items are grossly out of tolerance but in aggregate have been offset by other line entry variations. For example, in Figure 4 the "TDY Per Diem" and the "GSP EEQ SF BEMO EQ"[1] line entries are at the 86% and 50% quarterly expenditure levels, respectively. The current lag in the equipment expense area is offsetting the above-normal expenditures for TDY Per Diem. Equipment expenditures, however, may increase substantially in the future, thereby creating a serious funding problem for the cost center manager.

The cost center manager must make an effort to insure that any future changes in mission, facilities, or

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[1]"GSP EEQ SF BEMO EQ" is an abbreviation representing expenses from the "General Support Stock Fund, Base Equipment Management Office (BEMO) Equipment." (U.S. Department of the Air Force, TERRMS, AFM 178-X, p. 4-5.)

manning have been adequately prepared for as far as their impact on the budget. From an analysis of Figure 4, areas of particular concern to the cost center manager are possible cost overruns in both the military and civilian personnel expenses or in "per diem" expenses; and possible cost savings in the equipment, supplies, or TDY travel expenses.

Responsibility Center Report

Figure 5 depicts the Responsibility Center Report, which is also produced monthly but can be made available upon request. This report seeks to satisfy the needs of the responsibility center manager in exercising control over the various cost centers and expense elements under his purview. Subtotals for each expense element (such as Civilian Personnel, Travel of Personnel, and Supplies) are shown in aggregate as well as in specific line entries for each cost center under the control of the responsibility center. "Gross Expense," "Total Expense," and "Direct Expense" subtotals reflect an overall view of how the cost centers are performing in both the individual and aggregate senses. As in the case of the Cost Center Report, the "Cumulative Percent of Authorization Through the End of the Quarter" and the "Percent of Annual" authorized funds expended to date, when compared to the normal respective percentages available from the base budget officer, provide a method for identifying potential problem areas. Similarly, by scanning each line entry, the responsibility center manager can ascertain whether any specific cost centers are out of proportion with

Responsibility Center
Code & Title

Report Format
Description
(cost center
within expense
element)

Expense
Element
Description

Cost Center Array

- - - - Related Columnar Data.

Figure 5.

Responsibility Center Report (Sample)

Source: Training Manual for Project TERRMS, AFM 178-X, p. 4-8.

the planned budget allocations. It would then be the responsibility of the cost center manager to explain why the variances exist and whether or not any corrective actions would be necessary.

There are two major differences between the Cost Center Report and the Responsibility Center Report. First, individual elements of expense are listed for each category of expense incurred by the cost center on the former report, but are shown in aggregate on the latter report. Second, under each expense element there appears a list of status of funds expended to date for each cost center which comprises the responsibility center. In addition, the Responsibility Center Report can be used by outside agencies (especially the comptroller organization) in the preparation of reports and briefings on the status of funding expenditures basewide. If the need arises, combinations of these reports could reflect only the responsibility center rather than cost center expenditures for higher headquarters review.

Wing/Base Management Report

Unlike the Cost Center and Responsibility Center Reports, the Wing/Base Management Report is produced on an "as required" basis. Its purpose is to provide top level managers with the status of the responsibility centers' total expenditure figures as of the end of the month. The report does not reflect any specific expense elements or other line entries from which individual variances can be found. However, it does provide top level managers with a recap of the

funds status of the major organizational components, the responsibility centers, of the wing/base and their overall total. Although the rationale for any variances cannot be ascertained from this report alone, it does identify those responsibility centers that are in total over or under their budget authorizations. Normal percentage figures for comparison must again be provided by the base budget officer.

Top level managers can look at these variances and see if there might be a wing/base wide shortage or overage of the total annual expense authorization for Total Expense or Direct Expense categories. These managers can then evaluate the possibility of transferring funds between and among the various responsibility centers where necessary, or directing curtailment of selected activities in order to remain within the budget limitations. Top managers can initiate action to request additional funds from higher headquarters if reallocation of funds or curtailment of activities is not feasible. Although additional funds can generally be secured from higher headquarters whenever properly justified, top managers cannot consider this avenue as an "open door" since other units with even stronger justifications and priorities may have exhausted the total supply of available funds.

A "Total Reimbursements" line entry is a unique feature of this report. This line entry reflects the reimbursements earned by the host base for expenses incurred by tenant units. In the sample report shown in Figure 6,

Total and Net Expense Auth cannot be exceeded

Credits for Reimbursements earned thru report period.

Total Expense adjusted for earned Reimbursements

Total expenses for All R.C.'s

Responsibility Center Titles

Collecting Acct. for Expenses not identificble with other RGs

Tenant Unit expenses chargeable to host base
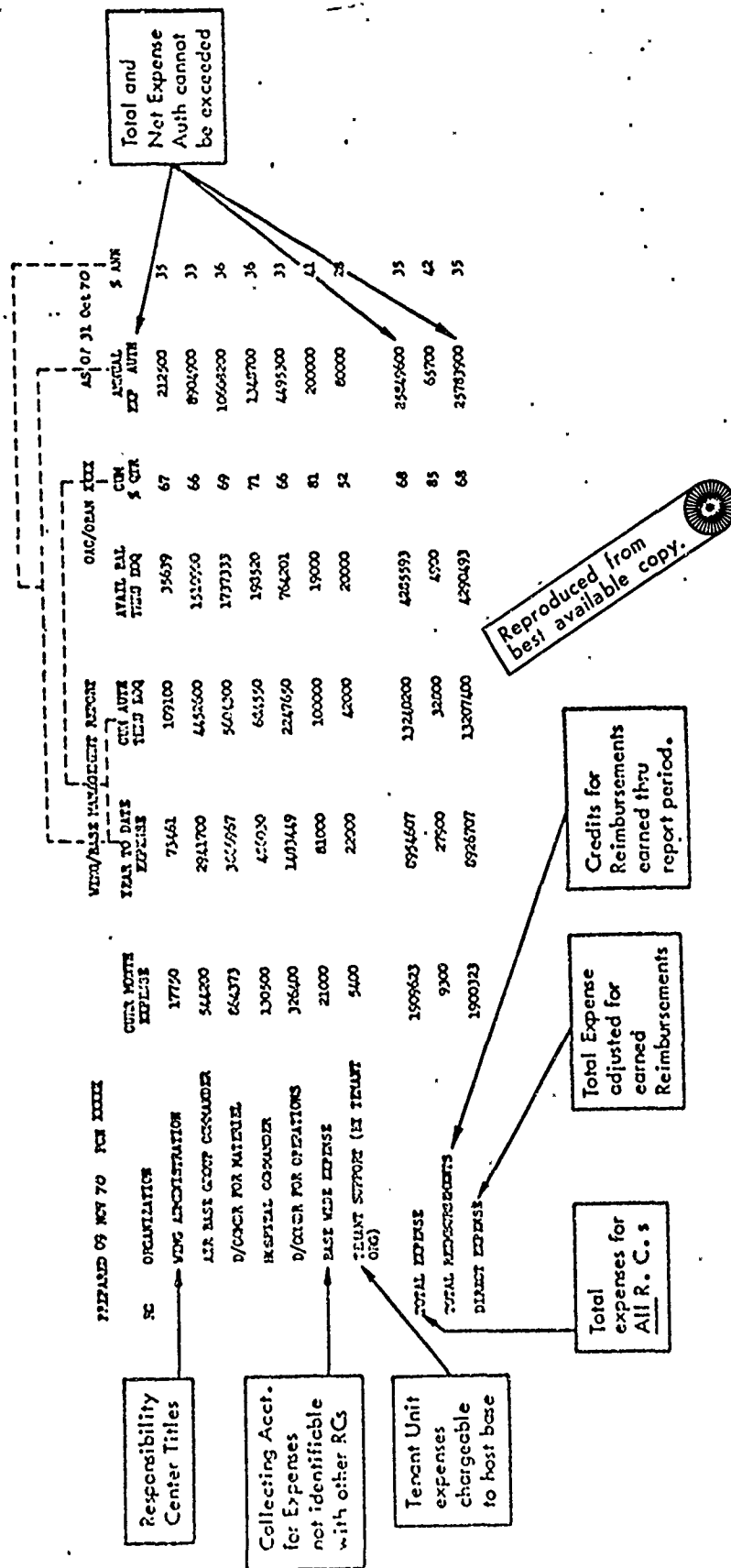
- - - - Related Columnar Data.

Figure 6

Wing/Base Management Report (Sample)

Source: Training Manual for Project TERRMS, AFM 178-X, p. 4-10.

the Cumulative Percent of Quarter is 85% instead of the
normal of 67%. The tenant units would consume funds in-
tended for wing/base operations if this unfavorable variance
were allowed to continue without any further increased fund
allocations from higher headquarters. On the other hand,
if earned reimbursements had been less than budgeted re-
imbursements, higher headquarters would automatically reduce
the tenant units' expense authorization since it was higher
than necessary.

Finally, the "Base Wide Expense" line entry reflects
those activities that do not directly fall under the control
of one of the responsibility centers. The wing/base
comptroller is generally called upon to monitor these activi-
ties since they have no designated responsibility center
manager.

Summary of Management Reports from the Accounting System for Operations

The Cost Center Report, the Responsibility Center
Report, and the Wing/Base Management Report together com-
prise the Management Reports from the Accounting System for
Operations. These reports allow managers to compare actual
expenses to planned and approved budget allocations.
Through analysis of these reports, managers can determine
how effective their organization has been in the utilization
of its available financial resources. The overview of
aggregate expenses, in terms of quarterly and annual budget
plans, provided in the reports can be used in conjunction

with both the Cost and Responsibility Center Reports to
identify where and when management action should be taken.
The reports do not establish any "hard and fast" rules for
uncovering variances or for deciding upon corrective actions,
but seek to identify potential problem areas for management
review. The review demands an analysis of the problem to
determine its validity, and then a determination of whether
or not modification of the plan or performance would be
necessary to bring the actual and planned expenses into
balance.

The basic philosophy that permeates the design of
these reports has been to give the lowest level of the
organization the information it needs to monitor expenses
in comparison with the planned budget, and then to summarize
the information for succeeding levels of management.

Materiel Expense Management Reports

General Policies

A basic understanding of selected Air Force policies
governing funds and expenses is necessary to understand the
nature of the various Materiel Expense Management Reports.
Funds are categorized as either supply or equipment funds.
Supply funds represent the amount of monies approved by
Congress in the form of an appropriation for the purchase
of expendable items, which are items that either lose their
identity in use by being consumed or used up, or by becoming
an integral part of another, higher assembly. Each wing/base

receives its funds in the form of an approved allotment which was derived from the allocations received at major air command level. The allocation itself was the result of an apportionment by the Bureau of the Budget based upon the Department of Defense's appropriation as approved by Congress.[1] Equipment funds are received in the same manner except that they are designated for the purchase, repair, or procurement of non-expendable items, which are items that do not lose their identity in use and must be accounted for during their entire service life. The wing/base level manager can request from his respective Numbered Air Force authority to transfer funds between these two areas, but total actions are limited to prevent the services from exceeding the total amount of the appropriation without Congressional approval.

Materiel items are classified as either expense or investment. Nonrepairable spares and repair parts, assemblies, and end items of equipment that have a unit value of less than one thousand dollars ($1,000) and are not managed by the Air Force Logistics Command comprise the expense materiel category. All other items are classified as investment materiel items. Expense materiel items are held in the Air Force Stock Fund (AFSF) until ultimately issued for use by a cost center or responsibility center. The stock fund is a revolving fund established to finance inventories of supplies and other stores. It is authorized by specific provision of law to finance a continuing cycle of operations,

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[1]Chauncey H. Dean, Jr., _Defense Financial Management_, pp. 15-7 to 15-9.

with receipts derived from such operations available in
their entirety for use by the fund, without further action
by Congress.[1] Basically, the stock fund can be viewed as a
warehouser selling directly to cost centers and responsibility
centers. All issues of stock from the AFSF are paid for by
the purchasers from their budgeted funds, thus giving the
stock fund the needed monies to procure more stock.[2] In-
vestment materiel items, on the other hand, are centralized
under an individual item manager or system manager who acts
as an inventory control point throughout the Air Force Supply
channel.

Several of the Air Force Stock Fund policies have a
definite influence on the cost center and responsibility
center managers. Foremost, the Issues/Sales policy requires
reimbursement to the stock fund from the appropriate funds
of the purchaser for items issued. The Turn-In Credit policy
for equipment provides full credit for serviceable items
turned in provided they can be used against known require-
ments. Credit is not received until the item is issued to
another agency if there are no known requirements. Turn-In
Credit for supply items generally follows the same procedure
except that no credit is given if the quantity turned in
causes the on-hand base asset level to exceed the computed

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[1] U.S. Department of the Air Force, TERRMS, AFM 178-X,
p. 2-17.

[2] Air Force Regulation 170-12 and Air Force Manual
67-1, Volume 1, Part 2, Chapters 5 and 6, list certain items
that are not reimbursable to the stock fund by the purchaser.

requisitioning objective. . The requisitioning objective is equal to the sum of the safety stock level, economic order quantity, order and ship time, and due-outs. Due-outs represent quantities of materiels for which immediate supply was not available at the time of requisition but for which a source of supply has been established.

Currently, there are six Materiel Expense Management Reports:

(1) Project Funds Management Record/Organization Cost Center Record (PFMR/OCCR) Status Report and Reconciliation

(2) Project Funds Management Record Report (PFMR Report)

(3) Daily Document Register

(4) Stock Fund Sales and Returns Analysis

(5) Organization Cost Center Due-Out List (OCCR Due-Out List)

(6) Organization Cost Center Record List (OCCR List)

The first two reports are designed for the responsibility center manager, while the other four are designed for the cost center manager.

Project Fund Management Record/Organization Cost Center Record Status Report and Reconciliation

The Project Fund Management Record/Organization Cost Center Record (PFMR/OCCR) Status Report and Reconciliation, as illustrated in Figure 7, contains a list of the cost centers and their respective supply and equipment funds status for each responsibility center. The responsibility center manager can request this report whenever

PFMR/OCCR STATUS REPORT AND RECONCILIATION   F8 2586   C326   PAGE 18

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PFMR CODE 501

ORG CODE	COST CENTER	FUND TARGET	NET ISSUES	BALANCE	DUE OUTS	FUND TARGET	NET ISSUES	BALANCE	DUE-OUTS
			SUPPLIES				EQUIPMENT		
108	23235	$16,500.00							
CHIEF OF MAINTENANCE									
100	23330	$119,700.00	$12,741.00	$3,759.00	$3,126.00	$407.00	$229.00	$178.00	$157.00
F/AS AEROSPACE SYSTEMS									
101	23331	$8,500.00	$78,410.00	$41,499.00	$130.00	$600.00	$360.00	$300.00	$1,300.00
FIELD MAINT SQ									
102	23332	$223,200.00	$7,057.00	$1,443.00	$25.00	$314.00	$185.00	$129.00	$99.00
ORGAN MAINT SQ									
102	23332		$176,370.00	$51,830.00	$10,950.00	$6,982.00	$4,274.00	$2,270.00	$820.00
OCCR TOTALS		$373,100.00	$274,578.00	$98,522.00	$14,231.00	$8,323.00	$4,988.00	$3,315.00	$2,376.00
PFMR		$377,100.00	$274,578.00	$98,522.00	$14,231.00	$8,303.00	$4,983.00	$3,315.00	$2,376.00
DIFFERENCE		$.00	$.00	$.00	N/A	$.00	$.00	$.00	N/A

Callout annotations:

- Organization Code Cost Center Code and Description
- Balance Available for Purchase of Supplies
- PFMR (RC)
- Ref Detail on OCCR Due-Out List
- Similar Data On Equip
- Supply Targets By CC and Total for the RC (PFMR)
- Net Issues Sales Minus Creditable Turn-Ins
- Ref Detail On Stock Fund - Sales and Returns Analysis

Figure 7

Project Fund Management Record/Organization Cost Center Record Status Report and Reconciliation (Sample)

Source: Training Manual for Project TERRMS, AFM 178-X, p. 4-20.

needed. The Fund Target less the Net Issues (issues less turn-ins) results in the Balance of funds available for further purchases. The Due-Outs are those items currently on back order with the stock fund. Therefore, the dollar value of available funds for further purchases is actually the difference between the Balance and the Due-Outs. It must be realized, however, that certain due-out back orders may arrive in the next fiscal period and others may ultimately be cancelled entirely. Thus, cost center managers must be cognizant of the status of due-outs to avoid over or under expenditures of necessary funds. For example, should the balance of funds available for expenditures reach zero, any due-outs to that agency could not be issued when the goods are received. Moreover, the due-out would be cancelled and the item would become available to any other agency wanting the item and possessing the funds. This condition can cause the stock fund inventory position to be in excess as well as jeopardize the mission of the requisitioning cost center. Managers can avoid this situation by cancelling due-outs before they arrive on the base or by securing the additional funds needed to pay for these items.

Project Fund Management Record Report

A sample Project Fund Management Record (PFMR) Report is illustrated in Figure 8. The purpose of this report is in the monitoring and validating of changes in the budget targets of the operating expense budget earmarked for purchases of materiel from the stock fund. The report

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31 OCT 70 SMOKEY HILL AFB.        PROJECT FUND MANAGEMENT RECORD REPORT (970/W05)        FB4203  DATE 0326   PAGE 6

PEMK                                  501
FUND CODE                              30
FISCAL YEAR                             1
OPAN CR OAC/ASN                      1224
BUDGET ACTIVITY                     01000
DEBITOR CODE                          833
SALES CODE                             16
ADSN                               661600
SYSTEM DESSIGNATOR                     01
RETAIL CARD INDICATOR                   0
FUND TARGET - SUPPLIES        $373,100.00
CUMULATIVE ISSUES             $298,278.00
CUMULATIVE TURN-INS             23,709.00
BALANCE AVAILABLE - SUPPLIES    98,522.00
FUND TARGET - EQUIPMENT          8,303.00
CUMULATIVE ISSUES                5,455.00
CUMULATIVE TURN-INS                620.00
BALANCE AVAILABLE - EQUIPMENT    3,315.00
DUE-OUT - SUPPLIS               14,231.00
DUE-OUT - EQUIPMENT              2,376.00

                      TRANSACTIONS SINCE LAST BILLING (FOR A&F USE ONLY)
                                        ISSUES        TURN-INS
GENERAL SUPPORT DIV SUPPL            $5,760.00       $1,713.00
GENERAL SUPPORT DIV EQUIP              316.00           75.00
SYSTEM SUPPORT DIVISION             25,920.00          710.00
CLOTHING DIVISION                       13.52
COMMISSARY DIVISION
FUELS DIVISION
```

Figure 8

Project Fund Management Record (Sample)

Source: Training Manual for Project TERRMS, AFM 178-X, p. 4-23.

reflects the total operating budf t target and funds status currently stored in the computer for a particular responsibility center. The Accounting and Finance agency must monitor the accuracy of this report whenever there are fund transfers or revisions by operating budget managers. This report is not periodically produced, but is generated to verify data in the PFMR whenever budget targets are changed.

Daily Document Register

The Daily Document Register, issued every day, is primarily used by the cost center manager to review the transactions processed that day against his account. Figure 9 depicts an abbreviated example of the report. The actual length of the report can be several pages long one day and only a few line entries the next because it reflects those items transferred and recorded during a particular ousiness day. The report lists each transaction within a cost center to include the shop code, item stock number with related information (such as the unit of issue, nomenclature, quantity, extended cost and work order number), and the budget, supply and transaction codes.

The budget code is a single number between one and nine identifying the nature of the transaction. Another transaction code is the Transaction Identifier Code (TRIC), which is also called the Document Identifier Code. This code indicates what type of transaction occurred in a three digit alpha code. The more common codes deal with issues (ISU), due-outs (DUO), and turn-ins (TIN). To ether these
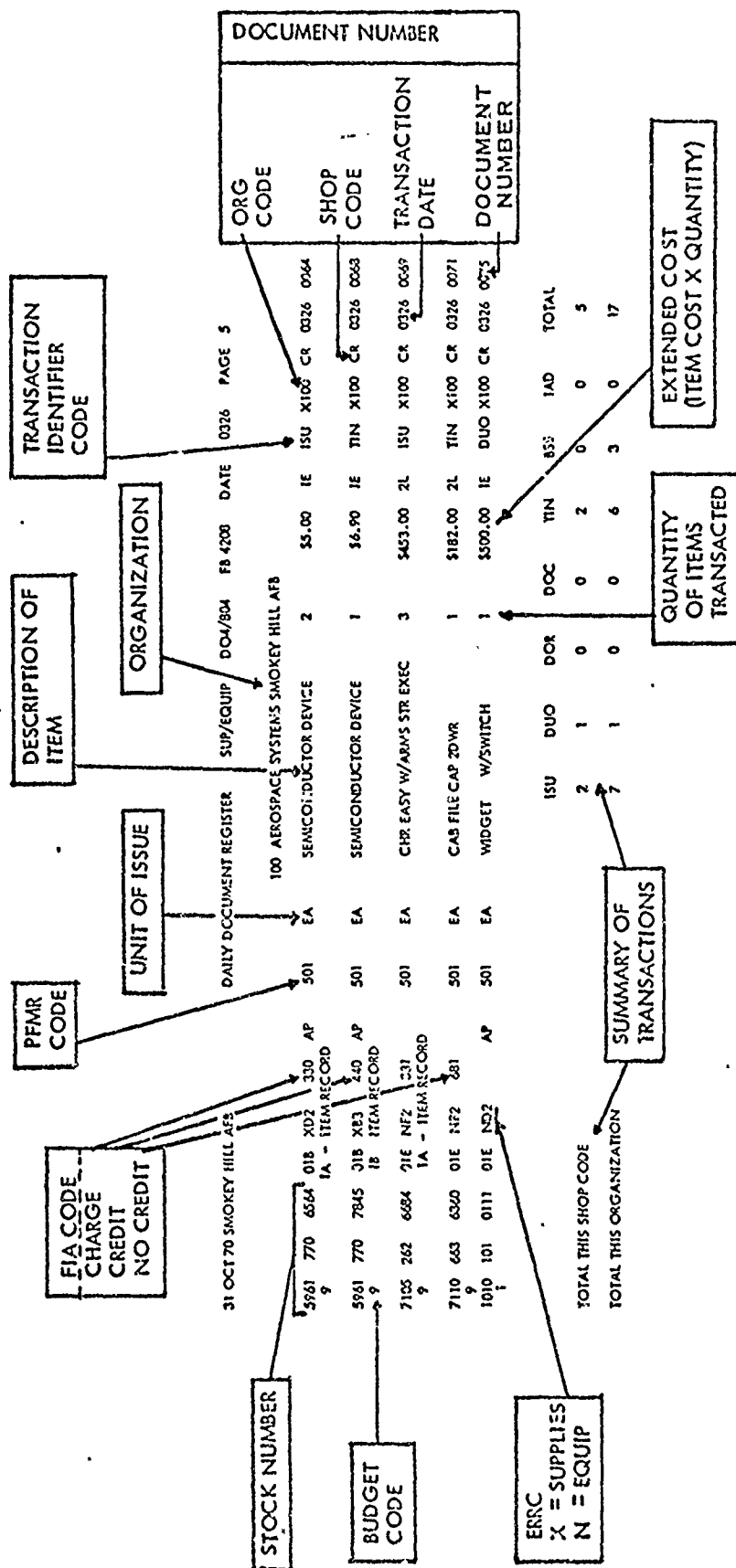
Figure 9

Daily Document Register (Sample)

Source: Training Manual for Project TERRMS, AFM 178-X, p. 4-26.

codes allow the cost center manager to identify the exact nature and type of transaction and its related effect on the fund's status. This report, then, gives the manager the opportunity to research problems and monitor materiel transactions on a daily basis if desired.

Stock Fund Sales and Returns Analysis

The Stock Fund Sales and Returns Analysis report is depicted in Figure 10. This report is produced when requested by the cost center manager. A summary of all transactions affecting sales and returns of stock fund items is shown by Federal Supply Group (FSG), which is a commodity classification used to group federal supply classes that are homogeneous.[1] Thus, the manager can ascertain in which area the majority of funds are being expended. If the manager must reduce spending to remain within budget limitations, knowledge of the higher buying categories allows the manager to focus his attention where the highest potential savings can be made. The sales, returns, and net totals in both the supplies and equipment categories are shown by organization. Analysis of the report can be extremely beneficial to the cost center manager in the preparation and justification of budget requests.

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[1] U.S. Department of the Air Force, AFM 178-6, p. 5-21.

Organization Code → 31 OCT 70 SMOKEY HILL AFB

Organization Title → 100 AEROSPACE SYSTEMS

Julian Date → 0326

Federal Supply Group

STOCK FUND SALES AND RETURNS ANALYSIS   FIXXXX

FSG	FSG DESCRIPTION	SALES SUPPLIES	RETURNS SUPPLIES	NET SUPPLIES	SALES EQUIPMENT	RETURNS EQUIPMENT	NET EQUIPMENT
36	SPECIAL INDUSTRY MACH	$154.40	$.00	$154.40	$.00	$.00	$.00
42	LIGHTING FIXTURES LAMPS	$10,025.95	$1,018.00	$9,007.95	$.00	$.00	$.00
66	INSTRUMENTS LAB EQUIP	$7.53	$.00	$7.53	$.00	$.00	$.00
67	PHOTOGRAPHIC EQUIPMENT	$150.80	$.00	$150.80	$.00	$.00	$.00
68	CHEMICALS CHEMICAL PROD	$412.50	$.00	$412.50	$.00	$.00	$.00
71	FURNITURE	$59.34	$.00	$59.34	$306.00	$240.00	$46.00
72	HOUSEHOLD COMML APPL	$.00	$.00	$.00	$.00	$.00	$.00
73	FOOD PREP SERVING EQUIP	$7.69	$.00	$7.69	$.00	$.00	$.00
74	OFFICE MACH VIS PCO EQ	$34.84	$.00	$34.84	$.00	$.00	$.00
75	OFFICE SUPPLIES DEVICES	$26,003.19	$5,000.00	$21,003.19	$201.00	$.00	$201.00
76	BOOKS MAPS OTHER PUBL	$53.98	$.00	$53.98	$.00	$.00	$.00
79	CLEANING EQUIP SUPPLIES	$5,078.25	$.00	$5,078.25	$.00	$.00	$.00
80	BRUSHES PAINTS SEALERS	$4,003.26	$.00	$4,003.26	$.00	$.00	$.00
81	CONTAINERS PKG SUPPLIES	$9.93	$.00	$9.93	$.00	$.00	$.00
83	TEXTILES LEATHER AND FURS	$6.90	$.00	$6.90	$.00	$.00	$.00
84	CLOTHING AND INDIV EQ	$286.12	$.00	$286.12	$54.00	$21.00	$33.00
85	TOILETRIES	$690.80	$.00	$690.80	$.00	$.00	$.00
93	NO METAL FABRICATED MATLS	$20,900.30	$.00	$20,900.30	$.00	$.00	$.00
99	MISCELLANEOUS	$20,338.22	$4,000.00	$16,338.22	$.00	$.00	$.00
	TOTAL BY ORGANIZATION	$83,419.00	$10,018.00	$78,401.00	$561.00	$261.00	$300.00

Figure 10

Stock Fund Sales and Returns Analysis (Sample)

Source: Training Manual for Project TERRMS, AFM 178-X, p. 4-28.

Organization Cost Center Due-Out List

The Organization Cost Center Due-Out List is illustrated in Figure 11. All of the organization's due-outs are listed as to whether their status is firm or memo. A firm due-out is representative of an item for which immediate supply was not available, but for which a source of supply has been established and action has been taken to procure the item. A memo due-out represents an item for which immediate supply was not available and further action is being taken to verify that the requisitioner has funds available to pay for the item, is authorized to procure it, and that a supplier can be found. The cost center manager must monitor all memo due-outs to insure that positive actions are being taken to procure those items that he still requires. Firm due-outs must also be carefully monitored to insure that a valid requirement still exists for the items listed. As shown in Figure 11, a certification of valid need for the items is required from the cost center manager.

It is important to monitor the due-out list to insure that items have not been accidentally cancelled and that excessive back order delays have not been incurred. Analysis of the Organization Cost Center Due-Out List in this manner will provide the cost center manager with an indication of the trend of supply support he is receiving. Supply difficulty letters can be generated and justified due to excessive back order delays or accidental cancellations of orders. Although such letters do not guarantee faster delivery

Figure 11

Organization Cost Center Due-Out List (Sample)

Source: Training Manual for Project TERRMS, AFM 178-X, p. 4-30.

times, they do tend to insure that appropriate attention is being provided in order to procure the items that have been ordered. An effective cost center manager must insure that all available and appropriate supply actions are being taken to provide his organization with those materiels required for the successful accomplishment of the cost center's mission.

The Organization Cost Center Due-Out List is available on an "as required" basis. Generation of the report is recommended at a frequency not to exceed twice per month since any changes in the status of a due-out would be reflected as a due-out release (DOR) or due-out cancellation (DOC) in the Daily Document Register. The Organization Cost Center Due-Out List reflects the document number, the stock number, type of item, unit of issue, the Expendibility-Recoverability-Repairability-Category (ERRC) code, requesting shop, cost, and due-out status. This is the only listing providing detailed information on the status of existing due-outs from the stock fund.

Organization Cost Center Record List

The Organization Cost Center Record (OCCR) List, as illustrated in Figure 12, is the last of the Materiel Expense Management Reports. This report is designed for the joint use of the Chief of Supply, Accounting and Finance materiel accounting section, and the cost center manager. The report includes an indicative data section which describes in detail the nature of the organization. A

31 OCT 70 SMOKEY HILL AFB   ORGANIZATION COST CENTER RECORD LIST   FB   0326   PAGE 62

100   AEROSPACE SYSTEMS

INDICATIVE DATA

ORGANIZATION	591
PRAR CODE	123
SUPPLY POINT	
TYPE ORGANIZATION CODE	C
PARENT MAJOR COMMAND	1023457(000))
ORGANIZATION IDENTIFICATION	
OFF-BASE INDICATOR	X
SATELLITE PROC CAP/EQUIP AUTH INDICATOR	2
SUBORDINATE COMMAND	6

PARCEL POST FREIGHT ADDRESS   SCOTIA NEBR 68075

FORCE ACTIVITY DESIGNATOR	3
DELIVERY DESTINATION ON BASE	146
EMO LOCATION CODE	5678
COST CENTER CODE	223330
SATELLITE SYSTEMS DESIGNATOR	01

NET ISSUES THIS FISCAL YEAR: CHARGED AGAINST OPERATING BUDGET

GENERAL SUPPORT DIV AFSF – SUPPLIES	–EEIC 659	$9,402.00
GENERAL SUPPORT DIV AFSF – EQUIPMENT	–EEIC 628	200.00
SYSTEMS SUPPORT DIV AFSF – SUPPLIES	–EEIC 655	69,001.00
CLOTHING DIVISION AF STOCK FUND	–EEIC 658	
COMMISSARY DIVISION AF STOCK FUND	–EEIC 607	
FUELS DIV AF STOCK FUND – FLYING FUELS	–EEIC 601	
FUELS DIV AF STOCK FUND-NONFLYING FUELS	–EEIC 612	

NET ISSUES THIS FY: NOT CHARGED AGAINST OPERATING BUDGET

STOCK FUND ISSUES–NONREIMBURSABLE	–EEIC N/A	$1,310.00
CENTRALLY PROCURED INVESTMENT EXPENSES	–EEIC 639	2,399.00
CENTRALLY PROCURED INVESTMENT-OTHER	–EEIC 140	9,510.00
BASE PROCURED INVESTMENT-EXPENSED	–EEIC 635	1,690.00
BASE PROCURED INVESTMENT – OTHER	–EEIC 140	3,220.00

FINANCIAL SUMMARY

FUND TARGET – SUPPLIES	$119,500.00
NET ISSUES THIS FISCAL YEAR	78,410.00
BALANCE	41,450.00
CURRENT DUE-OUTS	130.00

NET STOCK FUND ISSUES MADE TO DATE THIS MONTH

GENERAL SUPPORT DIV AFSF – SUPPLIES	–EEIC 659	$2,917.00
GENERAL SUPPORT DIV AFSF– EQUIPMENT	–EEIC 628	112.00
SYSTEMS SUPPORT DIV AFSF – SUPPLIES	–EEIC 655	21,309.00
CLOTHING DIVISION AF STOCK FUND	–EEIC 658	
COMMISSARY DIVISION AF STOCK FUND	–EEIC 607	
FUELS DIV AF STOCK FUND-FLYING FUELS	–EEIC 601	
FUELS DIV AF STOCK FUND-NONFLYING FUEL	–EEIC 612	

FUND TARGET – EQUIPMENT	600.00
NET ISSUES THIS FISCAL YEAR	300.00
BALANCE	300.00
CURRENT DUE-OUTS	1,200.00

NOTE: DUE-OUTS EXCEED BALANCE

Figure 12

Organization Cost Center Record List (Sample)

Source: Training Manual for Project TERRMS, AFM 178-X, p. 4-32.

"Financial Summary" recaps the OCCR status from fund target, net issues, and balance of due-outs for both supply and equipment monies. A glance at this section indicates whether or not enough funds are available to pay for existing due-outs. This is very significant because the supply computers are programmed to cancel issues if funds are not available and sell the item to someone else, or declare the item surplus to the stock fund requirements and direct transfer of the item to Redistribution and Marketing for disposal. This is not only costly to the Air Force, but detrimental to the cost center's mission since it must now re-requisition the items and repeat the due-out cycle.

A historical summary of the materiel financial transactions for the cost center appears on the right side of the report. The first section reflects the net issues during the current fiscal year which have been charged against the operating budget. All costs are shown by the Element of Expense Investment Code (EEIC), which identifies what types of resources were used.[1] The second section shows those net issues of the current year that were not charged against the operating budget. The final section reflects the net stock fund issues made to date for the current month.

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[1] U.S. Department of the Air Force, TARES, AFM 178-X, p. 2-10.

Summary of Materiel Expense Management Reports

The Materiel Expense Management reports are intended to provide the responsibility and cost center managers with the tools they need to evaluate how effectively their resources are being consumed. The Organization Cost Center Record List presents a concise picture of the current status of funds and the nature of expenditures. The Stock Fund Sales and Returns Analysis indicates the net expenditures to date by Federal Supply Group, while the Organization Cost Center Due-Out List depicts the status of items on back order. The Daily Document Register is a journal of each transaction affecting the status of requisitions and back orders, thus making available to the manager a source for verification and control of the activities funded by his cost center. The Project Fund Management Report/Organization Cost Center Status and Reconciliation and the Project Fund Management Record provide in summary fashion the total materiel activity to date and the authorized funding levels, respectively. Total dollar values reported can be compared from one report to another as an accuracy check. Figure 13 summarizes the different types of information that can be found in the various Materiel Expense Management Reports.

THE FOLLOWING INFORMATION

IS AVAILABLE IN

	PFMR REPORT	OCCR LIST	OCCR/PFMR RECON	SF SALES & ANALYSIS	OCCR D/O LIST	DAILY DOC REG
Fund Target: Supplies and Equipment	X	X	X			
Cum FY Issues: Supplies and Equipment	X					
Cum FY Issues by Federal Supply	X					
Cum FY Issues by Federal Supply Group: Supplies and Equipment	X			X		
Cum FY Turn-Ins: Supplies and Equipment	X					
Cum FY Turn-Ins by Federal Supply Group: Supplies and Equipment						
Net FY Issues: Supplies and Equipment		X	X	X		
Net FY Sales by Federal Supply Group: Supplies and Equipment		X		X		
Net FY Issues by SF Division		X				
Current Month Issues/Turn-Ins by SF Division	X					
Net Current Month Issues by SF Division		X				
Net Free Issues of SF Materiel		X				
Net Free Issues of Investment Materiel		X				
Current Due-Out Total: Supplies and Equipment	X (EOM)	X	X			
Detail of Due-Out Items					X	
Fund Balance Available: Supplies and Equipment	X	X	X			
Detail of all materiel transactions for a cost center						X

Figure 13

Materiel Reports Contents

Source: Training Manual for Project TERRMS, AFM 178-X, p. 4-18.

Chapter 6

COMPARATIVE ANALYSIS OF THE CURRENT MANAGEMENT

REPORTS AND EVALUATION CRITERIA

Introduction

The purpose of this chapter is to compare the
wing/base level management reports with the evaluation
criteria developed in Chapter 4. The criteria were defined
as the fundamental characteristics of management reports that
aid operating managers in the effective and efficient utili-
zation of resources. The current wing/base level management
reports were described in Chapter 5 to provide a basis for
comparison. The comparison of the current management reports
with the evaluation criteria is made in order to test the
following hypothesis:

> The current wing/base level management reports
> resulting from Project PRIME possess the fundamental
> characteristics of management reports that aid
> operating managers in the effective and efficient
> utilization of resources.

Both the Management Reports from the Accounting
System for Operations and the Materiel Expense Management
Reports seek to provide the wing/base level manager with
the information necessary to plan for and control the
utilization of available resources. These two categories
of reports together comprise the reporting system to be

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evaluated. Although the criteria that have been developed
are general in nature, they will now be specifically applied
to the Wing/Base Level Reporting System in order to determine
the validity of the hypothesis. This will be accomplished
by stating each criterion and then comparing the reporting
system directly with it. A conclusion of satisfied, par-
tially satisfied, or not satisfied will be drawn for each
criterion.

Application of Criteria to the Wing/Base
Level Reporting System

1. The Reporting System Should Provide Timely Information to the User

Satisfied

In general, timely information is any information
that reaches the decision-maker in time for him to evaluate
it, determine a course of action, and implement that action
in order to attain the desired effect before the problem
becomes unmanageable. The reports within the Wing/Base
Level Reporting System are generated at frequencies ranging
from everyday for the Daily Document Register to only when
requested for the Project Fund Management Report. The more
significant reports such as the Cost Center Report and the
Responsibility Center Report are normally produced monthly.
However, any or all reports can be produced on an "as
required" basis within a day. This near instantaneous
generation of the management reports gives the manager

flexibility to request and utilize the reports as the situation dictates.[1]

For example, the Organization Cost Center Due-Out List, which lists all firm and memo due-outs currently reflected in the supply channel, is generally produced semi-monthly. This frequency is enough to satisfy management's needs under normal circumstances. However, as the end of a fiscal year approaches, the cost center manager would require this report more often for two reasons. First, he must have sufficient funds available to purchase those due-outs arriving prior to the end of the fiscal year. Second, the manager must have sufficient funds available for the purchase of current mission requirements. By receiving the report more often, the manager is better able to accurately estimate how much funds are required to meet the arriving due-outs while still keeping sufficient funds available to meet current demands. Thus, the reporting system has aided the manager in determining "how much is enough" by providing him with timely information.

2. **The Reporting System Should Provide Accurate Information to the User**

Satisfied

Accurate information, like timely information, is dependent upon the relevant circumstances of the situation.

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[1]There is a problem, however, with the use of "on demand" reports that should be mentioned. Managers must be aware that certain reports will not be output unless they are requested and must know when to request those "on demand" reports. Otherwise, the reports will serve no useful purpose.

As James A. Huston states: ". . . unless the information
is accurate, relevant, and current it serves no purpose."[1]
From the manager's viewpoint, information is accurate only
when it truthfully reflects the resources consumed in
accomplishing organizational objectives. The degree of
accuracy is also a matter of concern to the manager. The
information needs to be accurate only to the extent that it
sufficiently serves the manager's purposes.

In the Air Force supply system, a computer generated
document is prepared to account for the transfer of materiel
items to the requisitioning agency. The same document re-
flects the stock number, description, and cost of an item
for charging expenses to the various cost center accounts.
The accuracy of the materiel expenditures can be verified
provided the recipient compares the items he receives with
the items described on the issuing document at the time of
delivery. As already noted, the Daily Document Register
reflects all of the materiel items charged to an organization.
The manager can verify the mathematical accuracy of the
reports by comparing the expense figure on his copy of the
issuing document with the corresponding entry in the report.
The computer compiles the materiel expenses of each organi-
zation and uses them as the basis for the dollar costs shown
on other wing/base level financial reports.

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[1] James A. Huston, The Sinews of War: Army Logistics
1775-1953 (Washington: Government Printing Office, 1966),
p. 667.

In the non-materiel areas such as civilian personnel and temporary duty (per diem) costs, the Accounting and Finance agency charges the appropriate cost or responsibility center for the actual amount of the expenses incurred. However, in the military personnel area, expenses are based on a standardized rate of cost for each assigned grade.[1]

The wing/base level reports reflect the dollar amount of the expenditures in each area rather than the exact dollar and cents cost. This practice of eliminating cents values on reports is called whole-dollar reporting and is widely used in financial reporting.[2] The lack of exact precision in the reports does not detract from their usefulness to the manager since the further degree of accuracy that cents would provide does not materially change the significance of the expenditures.

3. **The Reporting System Should Provide Understandable Information to the User**

Partially Satisfied

Financial reports are communicative devices which seek to present the reader with a clear and concise representation of the situation. As Bower, Schlosser and Zlatkovich state: "Reports should be clear and complete . . .

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[1] U.S. Department of the Air Force, Resource Manager's Handbook, Air Force Manual 178-6 (Washington: Government Printing Office, 1969), March 31, 1969, p. 4-3.

[2] Bower, Schlosser and Zlatkovich, Financial Information Systems, p. 47.

(and) must be written so as to prevent misunderstanding."[1]
The wing/base level management reports present the cost and
responsibility center managers with a reasonably under-
standable picture of their expenditures. Although each
report is designed to serve a different purpose, a common
thread runs throughout the reporting system since each
report reflects activity in terms of dollar costs. The
dollar unit serves as a common denominator that enables and
facilitates the joint use of different reports.

Several of the reports[2] contain columnar headings
and line entry descriptions that are easily understood by
the user. However, other reports contain numerous codes,
abbreviations, and acronyms that obscure the significance of
the material presented. A prime example of this is the
PFMR/OCCR Status Report and Reconciliation report. From
this report title alone, you may or may not recognize this
as the Project Fund Management Record/Organization Cost
Center Record Status Report and Reconciliation.[3] Other
problem areas are in the use of abbreviated line entries
such as "GSP EEQ SF BEMO EQ", which represents "General
Support Stock Fund, Base Equipment Management Office

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[1] Bower, Schlosser and Zlatkovich, Financial
Information Systems, pp. 233-234.

[2] Responsibility Center Report, Wing/Base Management
Report, Project Fund Management Record Report, Stock Fund
Sales and Returns Analysis, and Organization Cost Center
Record List.

[3] This report contains the supply and equipment funds
status of each cost center within a responsibility center.

Equipment" and appears on the Cost Center Report. Further-
more, this abbreviation doesn't match very well the words it
is intended to represent. Also, the Daily Document Register
includes a significant amount of unidentified coded data as
illustrated in Figure 9, page 76. In comparison, the
Organization Cost Center Due-Out List, as illustrated in
Figure 11, page 80, contains a sufficiently identified docu-
ment number consisting of four types of coded data.

Some of these problems could be alleviated by
relatively simple changes in the reporting format while
others would be much more difficult to correct or improve.
For instance, the Project Fund Management Record/Organization
Cost Center Record Status Report and Reconciliation could
easily be improved by the addition of one line of heading
substituting a clear text title for the abbreviated title.
On the other hand, the Organization Cost Center Due-Out
List and the Daily Document Register would require major
changes in report structure in order to replace abbreviations
with clear text and to provide appropriate columnar head-
ings, respectively. The important difference is that there
is a point at which attempts to simplify and improve the
reports must cease, and action taken to increase the user's
capacity for understanding the information presented in the
reports. Taken together, the wing/base level reports
partially satisfy the criterion of providing understandable
information to the user. The reporting system's chief
strength lies in the use of the common denominator of dollar

measurement, while its major weakness is in the excessive
use of acronyms, abbreviations, and codes.

4. The Reporting System Should Provide for Measurement of the Activity Being Managed

Satisfied

The Wing/Base Level Reporting System measures the
performance of cost centers and responsibility centers in
terms of the dollar costs incurred in the use and con-
sumption of resources. Examination of the Cost Center Re-
port, the Responsibility Center Report, and the Wing/Base
Management Report reveals that resource consumption by
element of expense, by cost center, and by responsibility
center, respectively, is measured in dollar units.
Similarly, all the Materiel Expense Management Reports
measure transactions involving supplies and equipment in
terms of dollar costs.

Dollar units are acceptable as a measure of the
performance of an activity for several reasons. First, a
dollar measuring unit permits the addition of things or
amounts for reporting purposes. A typical activity uses
materials, equipment, and manpower in its operation. The
performance of the activity could be stated in pounds of
raw materials consumed, hours of labor incurred, units of
output produced, or other similar measures. However, putting
such varied units all together in one report would be con-
fusing. Although such a report would be entirely correct
from a descriptive point of view, there would be no way to

add these different units in a numerical sense. In terms of
the types of decisions and actions that are involved, it is
more meaningful to express the performance of the activity
in a common denominator, dollars. Second, a dollar measuring
unit facilitates the comparison of one thing with another.
For example, a manager may be considering the substitution
of one raw material for another. It can be readily de-
termined that an expensive material will actually cost less
than an inexpensive material only when the savings and ad-
vantages of reduced worker time, electricity, or storage
space are expressed in terms of dollars. Finally, the use
of a dollar measuring unit facilitates mathematical analysis
and computation. For instance, the aggregate operating costs
may be divided by units of output to establish a unit cost.
Or the amount of materials requisitioned may be added to the
amount already on hand minus what has been used in order to
establish what should be on hand now. In short, financial
data may be combined or related in various ways to establish
bases for interpretation, comparison, or forecasting future
results of operations.[1]

Although the dollar is generally acceptable as a
unit of measurement, it has several drawbacks which should
be recognized. A dollar today does not have the same value
as a dollar did yesterday or will have tomorrow. The dollar,
as with any unit of measurement, can be distorted by

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[1]Vatter, Accounting Measurements for Financial
Reports, pp. 4-6.

individuals to their own personal advantage.[1] Managers
must be resistant to attempts by individuals within the
organization to distort the measure. For example, a trans-
portation manager may cut back on bench stock fills or limit
the amount of maintenance performed in the motor pool as the
end of the fiscal year approaches and budgeted funds become
scarce. While these actions may help the manager to remain
within the budget, their total effect on the organization
may be extremely detrimental. Flight line maintenance and
supply delivery vehicles may be reduced to a critical status,
thus negatively affecting the entire wing/base operation.

5. The Reporting System Should Provide Information for the Planning Process

Partially Satisfied

Managers must plan for the allocation of men,
materiel, equipment, and facilities in accomplishing organi-
zational objectives. Basically, planning involves deciding
what to do, how to do it, and when to do it.[2] The Wing/Base
Level Reporting System partially satisfies the manager's
requirements for planning information. The manager is pro-
vided with some very important information for the develop-
ment of planning premises. The Management Reports from the

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[1] George C. Horngren, Accounting for Management
Control: An Introduction (Englewood Cliffs: Prentice-Hall,
Inc., 1965), p. 296.

[2] H. H. Schwartz, "MIS Planning," Datamation, XVI
(September 1, 1970), p. 16.

Accounting System for Operations provide the manager with
information on the consumption of manpower and materiel re-
sources and the budgetary fund balances which can be applied
to the various resources. Furthermore, managers can see how
actual expenses compare to approved budget allocations. The
Materiel Expense Management Reports provide the manager with
detailed information on the use of supplies and equipment
resources.

The Wing/Base Level Reporting System is useful to
the manager in the formulation of budgets. Budgets are a
very important type of plan to the military manager. The
budget of a governmental body is largely restrictive in
nature, imposing upper limits on expenditures for various
purposes which have been approved by the legislature. Gen-
eral business budgets, on the other hand, are an expression
of standards as to the best means of achieving certain ob-
jectives under the conditions that are expected to prevail
during the period to which the budgets relate.[1] The nature
of governmental budgets partially explains the heavy
emphasis on funds control that is found in the Wing/Base
Level Reporting System.

In order to aid managers in the preparation of
plans, the management reporting system should provide in-
formation which relates past expenditures to the conditions

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[1]Gordon Shillinglaw, Cost Accounting: Analysis and
Control (Homewood: Richard D. Irwin, Inc., 1961), p. 31.

which caused the past data to behave as they did.[1] While
the Wing/Base Level Reporting System provides information
on past and current operating performance, resource con-
sumption, and financial position, it does not relate these
factors to the accomplishments of the organization. In
other words, the reports do not show the manager what he did
with the resources he consumed. Such a condition hinders
the planning process since the plans developed by the man-
ager must be based on an analysis of the resource inputs
and the organizational outputs to which they relate.[2]

The Wing/Base Level Reporting System provides useful
information for the development of planning premises and
budgets. However, since planning is hindered by the failure
to relate resource inputs to organizational outputs, it must
be concluded that the criterion of providing information on
the planning process is only partially satisfied.

6. The Reporting System Should Provide Information for the
    Control Process

Not Satisfied

The Wing/Base Level Reporting System does not
facilitate management control. The control process re-
quires (1) the establishment of standards, (2) the meas-
uring of performance against these standards, and (3) the

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[1] Leon E. Hay, "What Is An Information System?"
Business Horizons, Volume XIV, Number 1, February, 1971,
p. 67.

[2] Shillinglaw, Cost Accounting: Analysis and Control,
p. 23.

correcting of deviations from standards and plans. The Wing/Base Level Reporting System adequately measures the performance of an activity, but it does not report standards for use by management in making comparisons. The comparison of actual performance against a standard was previously identified as the essence of control.

An analysis of the Management Reports from the Accounting System for Operations reveals a somewhat feeble attempt to provide the manager with standards from which he can make comparisons and quickly spot significant deviations from the plan. By calculating "percentage norms" for the specific time period involved, the manager can supposedly make meaningful comparisons with his actual performance. The "percentage norms" are available from the base budget officer and not actually printed on the reports. They are merely expressions of the percentage of time that has elapsed in relation to the current semi-annual period and to the full fiscal year. For instance, the "percentage norms" for reports as of 31 October would be 66 2/3% of the cumulative quarterly programs (July-December period) and 33 1/3% of the full annual program. However, these norms are of little if any use in actual practice. The calculation method assumes that resource consumption is evenly distributed throughout the year. In other words, seasonal factors and increases or decreases in mission operations are disregarded. Therefore, these norms cannot be considered standards.

The Wing/Base Level Reporting System fails to provide

the manager with meaningful standards on which he can base comparisons in evaluating organizational performance. The manager must construct standards intuitively each time he examines the reports in search of deviations from the plan. Therefore, it must be concluded that the Wing/Base Level Reporting System does not satisfy the criterion of providing information for the control process.

7. The Reporting System Should Provide Information on Trends

Partially Satisfied

Managers are made aware of trends when current performance is reported in proper relationship to previous experience. Ideally, reports should include the following types of information each time they are output to management:

1. Historical activity for the preceding six to twelve reporting periods.

2. Current period activities.

3. Cumulative results.[1]

The outputs of the Wing/Base Level Reporting System include information on the current period's performance as well as cumulative totals for the quarter and the year. The manager gets some indication of the trend of expenditures by analyzing the cumulative totals and current

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[1]For example, the Air Force Logistics Command D056 Product Performance Reporting System reports trends in an excellent manner. In addition to those features mentioned above, the D056 reporting system also informs the reader in narrative form of the nature of the trends being evaluated.

activity. However, he does not get a complete picture of related performance in the past since the reports do not include the historical performance of previous periods. The inclusion of historical data on the reports is a very desirable feature that facilitates the observation and analysis of trends. Of course, the manager is not precluded from saving the reports for file reference or charting the information over time if he is so inclined. For these reasons, the Wing/Base Level Reporting System only partially satisfies the criterion of providing information on trends.

Summary of Comparative Analysis

The results of the evaluation of the Wing/Base Level Reporting System are summarized in Table 1, where each report is individually rated against each criterion. The conclusions drawn for the two report categories and for the overall Wing/Base Level Reporting System are based on the arbitrary decision rules stated in Chapter 2.

Two reports from the Materiel Expense Management Report category, the Project Fund Management Record Report and the Daily Document Register, were considered "not applicable" for rating against the criterion of providing information on trends. The Project Fund Management Record Report is issued only when budget targets are changed in the operating expense budget of an activity. This report is primarily a verification device for the monitoring and validating of the budget target changes and is not intended

Table 1. An Evaluation of the Wing/Base Level Reporting System

Key: S - Satisfied
      P - Partially Satisfied
      F - Not Satisfied (Failed)
      N/A - Not Applicable

REPORT/SYSTEM	Timely	Accurate	Under-standable	Measure-ment	Planning	Control	Trend	Overall
Cost Center Report	S	S	P	S	P	F	P	?
Responsibility Center Report	S	S	S	S	P	F	P	F
Wing/Base Management Report	S	S	S	S	P	F	P	F
MANAGEMENT REPORTS FROM THE ACCOUNTING SYSTEM FOR OPERATIONS	S	S	P	S	P	F	P	F
PFER/OCCR Status Report & Reconciliation	S	S	P	S	P	F	P	F
Project Fund Management Record Report	S	S	S	S	P	F	N/A	F
Daily Document Register	S	S	P	S	P	F	N/A	F
Stock Fund Sales and Returns Analysis	S	S	S	S	P	F	P	F
Organization Cost Center Due-Out List	S	S	P	S	P	F	P	F
Organization Cost Center Record List	S	S	S	S	P	F	P	F
MATERIEL EXPENSE MANAGEMENT REPORTS	S	S	P	S	P	F	P	F
WING/BASE LEVEL REPORTING SYSTEM	S	S	P	S	P	F	P	F

to provide information on trends. The Daily Document Register also is not intended to provide information on trends. This report is primarily used by the cost center manager to review the nature and type of materiel transactions that occur on a particular business day.

It can be seen from Table 1 that the Wing/Base Level Reporting System fails to satisfy the criterion of providing information for the control process. Therefore, the hypothesis must be rejected since the Wing/Base Level Reporting System fails to satisfy or partially satisfy all the evaluation criteria.

Chapter 7

SUMMARY AND CONCLUSIONS

The purpose of this thesis was to define the characteristics which should be found in a reporting system that aids managers in the effective and efficient use of resources and to determine the extent to which the Wing/Base Level Reporting System meets these characteristics. The characteristics which should be found in a reporting system were developed through a comprehensive review of the literature pertaining to the areas of management reporting and management information systems. These characteristics become the criteria by which to evaluate the Wing/Base Level Reporting System.

The major emphasis in the literature review was placed on material relating to management information systems in the commercial business sector. The literature from governmental and military sources primarily provided background information and descriptive material. This approach could be taken because both public and private agencies are concerned with the effective and efficient use of resources in the accomplishment of organizational objectives. Despite the differences that do exist between nonprofit organizations and profit-oriented companies, the reporting system for each type should share the same basic characteristics.

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Summary

The Department of Defense has developed various resource management systems which are oriented to the needs of managers at all levels. In particular, a reporting structure to aid Air Force wing/base level managers in the effective and efficient use of resources has been established as a result of Project PRIME. The Wing/Base Level Reporting System consists of the Management Reports from the Accounting System for Operations and the Materiel Expense Management Reports.

The basic problem addressed in this research was a test of the hypothesis that the current wing/base level management reports resulting from Project PRIME possess the fundamental characteristics of management reports that aid operating managers in the effective and efficient use of resources. Several actions were taken in order to test this hypothesis. First, a definition of the characteristics which should be found in management reports that aid managers in the effective and efficient use of resources was formulated (Chapter 4). Next, a description of the management reports currently utilized at Air Force wing/base level as a result of Project PRIME was prepared (Chapter 5). Finally, an evaluation of the Air Force wing/base level management reports was accomplished through comparison with the characteristics which should be found in management reports that aid functional managers in the effective and efficient use of resources (Chapter 6).

Conclusions

An examination of the literature pertaining to management information systems and reporting systems provided the basis for the criteria which were used to evaluate the wing/base level management reports. The criteria are:

1. The reporting system should provide timely information to the user.

2. The reporting system should provide accurate information to the user.

3. The reporting system should provide understandable information to the user.

4. The reporting system should provide for measurement of the activity being managed.

5. The reporting system should provide information for the planning process.

6. The reporting system should provide information for the control process.

7. The reporting system should provide information on trends.

Each of the criteria was considered of equal importance for evaluation purposes. Furthermore, it was decided that the Wing/Base Level Reporting System must satisfy or partially satisfy all the criteria in order to accept the hypothesis.

It was concluded that the Wing/Base Level Reporting System satisfies the criteria of providing timely information (Criterion Number 1), providing accurate information (Criterion Number 2), and providing for measurement of the

activity (Criterion Number 4). However, the hypothesis must
be rejected because the Wing/Base Level Reporting System
fails to satisfy to any extent one criterion. The criterion
of providing information for the control process (Criterion
Number 6) was not satisfied. The Wing/Base Level Reporting
System fails to provide the manager with standards on which
he can base comparisons in evaluating organizational perform-
ance. It was pointed out in Chapter 4 that standards are
necessary for the control process.

Though not contributing to rejection of the
hypothesis, several areas of weakness were indicated by the
criteria which were only partially satisfied. The Wing/Base
Level Reporting System only partially satisfied the criteria
of providing understandable information to the user (Cri-
terion Number 3), providing information for the planning
process (Criterion Number 5), and providing information on
trends (Criterion Number 7). The Wing/Base Level Reporting
System makes extensive use of codes, abbreviations, and
acronyms that obscure the meaning and significance of the
information presented. Furthermore, the Wing/Base Level
Reporting System does not relate resource consumption to
the accomplishments of the organization. It was explained
in Chapter 6 that such a condition hinders the planning
process since the plans formulated by the manager must be
based on an analysis of resource inputs and the organi-
zational outputs to which they relate. Finally, the
Wing/Base Level Reporting System does not include information

on the historical performance of previous periods. Trend
analysis is facilitated when the manager is provided infor-
mation on historical performance, current activity, and
cumulative results. The omission of historical performance
makes it difficult for the manager to get a complete picture
of related performance in the past.

The Wing/Base Level Reporting System is weak in the
areas of understandability, planning information, and trend
information. These deficiencies can and should be corrected
through relatively minor changes in the computer programs
and data files used to generate the reports.

Recommendations for Further Study

The failure to incorporate standards into the
Wing/Base Level Reporting System is a serious deficiency.
Action will ultimately have to be taken to correct this
deficiency if the system is to be used successfully by Air
Force managers. This problem can be resolved, however it
was beyond the scope of this research.

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